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ABSTRACT

Presented are papers by keynote speakers and workshop session leaders from a 1977 conference on Creativity and the Gifted/Talented Child. Following a copy of the conference program are entries with the following titles and authors: "Creative Potential and Educational Experience--A Rationale for Creative Education Programs" (S. Parnes); "Teaching the Gifted and Talented--Preparing Educators for the Gifted/Talented-A Challenge" (D. Sisk); "Needed Programs for the Gifted" (J. Gallagher); "A Humanistic Approach to the Gifted/Talented Child" (D. Brown); "Reaching the Learning Disabled Gifted" (B. Given); "The Vulnerability of the Gifted Child" (M. Rose); "Young, Black, and Gifted--The Culturally Different Child" (C. Brooks); "Do Gifted Girls Fear Success?" (C. Becker); "Science Approaches for the Gifted Middle Schooler" (D. Brandewie); "Reading Motivators for High Potential Learners--Grades K-8" (M. Rourke); and "A Group Encounter Strategy through Creative Writing or 'How to Stuff Wild Ducks'" (H. Jellen). Provided after each of their papers are the publications of each keynote speaker, and included is a selected reading list of books on creativity. (SBH)

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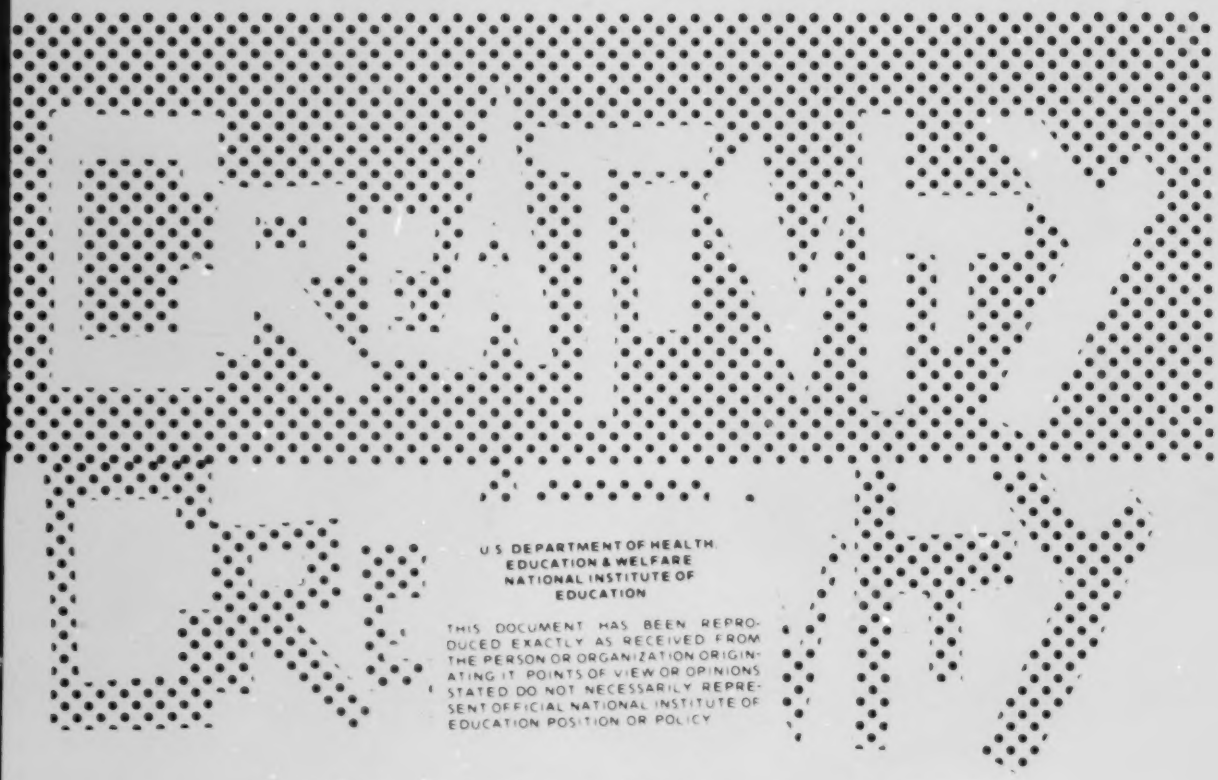
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and the Gifted/Talented Child

Proceedings of the Second Annual Northern Virginia Conference on Gifted/Talented Education

FEBRUARY 25, 26, 1977

George Mason Jr.-Sr. High School
Falls Church, Virginia

Edited By
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J.H.O.

INTRODUCTION

On February 25th and 26th, 1977, over 650 teachers, parents, administrators, school board members and others spent nearly twelve hours together learning about the current "state of the art" in working with gifted and talented children.

This book contains papers from each of the keynote speakers and selected papers from some of the workshop session leaders. Sidney Parnes, Dorothy Sisk and James Gallagher were instrumental in helping to bring together the most current thoughts on the education of the gifted/talented child.

In his paper, "Creative Potential and the Educational Experience", Sidney J. Parnes states that, "Failing to use mental resources is wasteful both to society and to the individual himself." He further states that "a common educational objective is to help each person develop his mind to its fullest potential, to educate him to live effectively in a changing world, to prepare him to institute changes where they are needed and to adjust to those changes that he is forced to accept." Both of these comments are included in his "Philosophy of Creative Behavior", which sets the pace for his continuing discussion of the nature of creative behavior and ways of facilitating the creative process.

Dorothy Sisk, in her article, "Teaching the Gifted and Talented", gives a short look at the history of the role of the federal government in the education of the gifted and then speaks of ways of developing quality programs to meet the needs of our gifted/talented population.

In answer to the question, "Why should we have special programs for the gifted?", James Gallagher, in his article, "Needed Programs for the Gifted", answers that "... the reason why we should all be interested (in the education of the gifted) is that we all have a stake in their future, because the solutions to our major societal and cultural problems--the economy, the population explosion, pollution, energy, and our own drifting sense of purpose as a nation--will not be solved by a cavalry charge on a Congressional resolution. It will be solved only by the hard, extensive work of the brightest and most highly motivated persons in our society."

Gallagher continues by stating his strong concern for the content of curriculum used in programs for gifted children and has developed a "support system" that represents six major components that should comprise any substantial program for the gifted in order to justify itself as a quality program.

The eleven papers from the workshop session leaders help to discuss their current area of interest and how the gifted/talented child is made a part of their program.

School divisions in the Northern Virginia area all work with their gifted/talented populations in slightly different ways. It is not in the difference that we should make note, but in the common desire to do the best we possibly can for the child who comes to us as gifted or talented.

I hope that this collection of papers will help in that end.

Falls Church, Virginia
June, 1977

Jeffrey H. Orloff

I. THE KEYNOTE SPEAKERS

CREATIVE POTENTIAL AND THE EDUCATIONAL EXPERIENCE

A Rationale for Creative Education Programs

by

Sidney J. Parnes, Professor of Creative Studies

State University College of New York at Buffalo

A PHILOSOPHY OF CREATIVE BEHAVIOR

Arthur Koestler refers to creativity as an "actualization of surplus potentials." When we review the tremendous strides that technology has made in actualizing the potentials of our material resources, it is difficult for us to believe that the development of the most important resource of all -- the human one -- has not kept pace. Unused material resources, Jerome Wiesner points out, are not necessarily wasted; unused human resources always are.

Education and Mental Health: Failing to use mental resources is wasteful both to society and to the individual himself. In effect, the person who fails to use his potential may become psychologically unhealthy or "mentally ill." We might say, even, that the mental health bill of society is made up of the difference between the potential and the operational level of every single person in the population.

A common educational objective is to help each person develop his mind to its fullest potential, to educate him to live effectively in a changing world, to prepare him to institute changes where they are needed and to adjust to those changes that he is forced to accept. Working toward and hopefully attaining this goal virtually assures society of a psychologically healthy membership.

To live effectively in a changing world, one needs to learn to make effective decisions and to act upon them intelligently. When a person makes optimum decisions, he first speculates on what "might be" from a variety of viewpoints; then he senses and anticipates all conceivable consequences or repercussions of the variety of actions he has contemplated; finally he chooses and develops his best alternative -- in full awareness.

WHAT IS CREATIVE BEHAVIOR?

From the foregoing discussion, one may deduce that I define creative behavior as that which demonstrates both uniqueness and value in its product. The product may be unique and valuable to a group or organization, to society as a whole, or merely to the individual himself. Creativity is thus a function of knowledge, imagination and evaluation. Without knowledge, there obviously can be no creativity. By way of analogy, we might consider the kaleidoscope wherein the more pieces we have in the drum, the more possible patterns we can produce. Likewise, in creative learning, the greater our knowledge, the more patterns, combinations or ideas we can achieve. But as Alfred North Whitehead stressed long ago, education should aim at "the effective utilization of knowledge." The underlinings are mine. Merely having the knowledge, the bits and pieces in the kaleidoscope, does not guarantee the formation of new patterns. One must "revolve the drum," manipulate the knowledge by combining and rearranging facts into new patterns. In the mind, these new patterns are "ideas."

The effectiveness of creative productivity also depends, of course, on the evaluation and development of embryonic ideas into usable ideas. Without knowledge, imagination cannot be productive. Without imaginative manipulation, abundant knowledge cannot help us live in a world of change. And without the ability to synthesize, evaluate and develop our ideas, we achieve no effective creativity.

Creative Reading: Thus when one behaves creatively, he is basically re-focussing elements of his experience into new and meaningful relationships. Note that the very act of reading, or any form of sensory input, allows for techniques which promote interrelationships or those which promote sheer storage. Throwing new input into fresh relationships with other stored material brings about connections which make for more creative use of the knowledge. As a matter of fact, knowledge "new to the individual" can then be generated, as is exemplified by discovery courses like the new math.

E. P. Torrance and J. A. Harmon (1961) found that students used knowledge more creatively when it was learned with a "creative set" rather than with a "memory set". Students with the "memory set" were more restricted in finding new implications or more applications for the knowledge. Ray Hyman's studies (1964) show that information, as such, may not be as important to creativity as the way one seeks and receives it -- as well as how he deals with it. All other things being equal, the more elements in one's experience, the more new relationships he is able to concoct; and again, all other things being equal, the more new relationships he concocts, the greater the chances of his producing a potentially fruitful one.

Tightness and Looseness: General M. K. Deichelman once spoke of the necessity to "stay loose", which is a very vivid way of discussing the qualities of the "creative person". The enigma becomes, How loose? How loose can one become before he "falls apart"; and conversely, how tight can one stay before he becomes rigid?

Freedom with discipline; young outlook with mature judgment -- this is the dilemma of "creative man". But it is the mark, too, of what Maslow (1959) calls the integrated individual, whom he describes as follows: "A truly integrated person can be both secondary and primary; both childish and mature. He can regress and then come back to reality, becoming then more controlled and critical in his responses."

Conformity: The creative person cannot be a "blind" conformist. I use the term "blind conformity" to differentiate from deliberate or purposeful conformity.

Deliberate conformity in behavior may sometimes be desirable or even necessary to a creative life, but "blind" conformity in thinking is demonstrably detrimental to the fullest creative growth. Conformity reduces the likelihood of one's creating the fresh viewpoints necessary to achievement of creative insights. Conformity is thus the enemy of originality and the creative productivity to which novelty can lead us. Yet society tends to mold its members into one conforming being. Its culture is often at odds with creative ideas because these ideas drop like pebbles in a sea of tranquility, forcing changes.

The creed of the creative person might well be borrowed from the old adage that prays: "Give me the courage to change those things that should be changed, the strength to accept those things that should not or need not be changed, and the wisdom to distinguish between the two."

Errors of Omission: When we conform to prevailing norms, we are seldom guilty of an error of commission. But what about errors of omission? Errors of omission are much less likely to be detected than errors of commission. If I do not act upon an idea which later proves to have been "right", I myself may be the only one aware of my mistake. However, if I act and am wrong, my error is usually obvious to others. Most of us, through fear of some form of ridicule, tend to play the game safe, bringing forth our ideas only when we are sure of their worth and acceptance.

Most people are probably more concerned with meeting each situation in the same way as they met it before, but making fewer "apparent" mistakes each time, than in finding new and imaginative ways to solve their problems. We let our "unkissed imagination" become our ulcers, as John Ciardi puts it.

Summary Description: To try to summarize the description of the "creative person", I might say that the individual who behaves creatively is oriented toward setting and solving meaningful problems, using an inner drive to recombine his storehouse of experiences in new ways. In attacking his problems, he does not behave as a conformist; instead, he pioneers often, is not afraid to fail frequently, but is productive in the long run.

Thus the individual behaving creatively sees things through many eyes, from many viewpoints. He allows his associative processes to relate freely what his senses bring to him. He is constantly changing his views as he forms new associations, as compared with the "non-creative" individual who freezes his views into rigid ideas which we call prejudices.

CREATIVE INTELLIGENCE

From the foregoing discussion, it becomes apparent that the so-called creative attributes overlap considerably with attributes we expect to find in the so-called intelligent individual. Terms such as "creative intelligence" are tending to replace the notion of creativity versus intelligence. Creativity is a part of, not apart from, what we normally think of as intelligence. J. P. Guilford's structure-of-the-intellect (1967) contains 120 known factors, only a small number of which are measured in commonly used intelligence tests. This is the reason for the relatively low correlations that are typically found between "intelligence" tests and "creativity" tests. The latter typically measure factors not covered in the former. Hence, there is need for a broad range of tests if we hope to approximate the total intellectual capacity of a person -- i.e., to measure his "creative intelligence". Guilford emphasizes that the person who scores high on creativity measures tends to have relatively high intelligence as measured by IQ tests, but that the high IQ person may be anywhere from high to low on creativity measures; hence, his term "creative underachievers."

Creativity, Intelligence and Achievement: In recent years, much new light has been thrown on the relationships among intelligence, creativity and achievement. It appears that school achievement, as commonly measured, is in general more affected by the so-called intelligence factor (IQ) than by factors measured in creativity tests. However, the research of Getzels and Jackson (1962) with gifted students (average IQ of 132) has shown that the most

"highly creative" ones scored just as well on achievement tests as did the most "highly intelligent" ones, even though there was a 23-point IQ difference between the averages of the two groups (those gifted who were at the very highest on IQ tests versus those at the very highest on creativity tests). More important still is the fact that a number of investigators have discovered little or no relationship between academic performances and later professional success.

EDUCATION FOR CHANGE

Creative Teaching and Leadership: Although there is much emphasis on creative teaching (the imaginative use of materials -- films, demonstrations, etc. -- by a teacher), relatively less emphasis is being placed on the deliberate development of creative behavior in the student. Teaching in ways that impart information more effectively and in a more interesting manner is, to me, not enough to qualify it as teaching for creativity development. It is the difference between speaking and listening, between expressing oneself and encouraging others to express themselves. Teaching or supervising for the development of creative behavior taps the internal resources of the student through the use of any media that can be made available.

Think of the school situation as a group or organization having a single leader (in this case, the teacher). An organization can be creative primarily in the sense that its leader is highly creative and directs the personnel autocratically in implementing his creative ideas. On the other hand, an organization can be creative primarily because its leader subtly stimulates the creative productivity of the individual members. In the former organization, the main rewards to the individual are apt to be those which are customarily enjoyed off the job -- salary, vacations, and those benefits that are meted out by the leader -- or, at best, environmental and social conditions that an individual enjoys on the job. Primarily, however, the benefits are tangible.

Leadership for Creative Growth: The organization that provides for creative growth of the individual is one wherein the intrinsic satisfactions are often greater than the extrinsic rewards -- for example, the sense of contributing a major portion of oneself to the job or the sense of self-expression being tangibly rewarded. The individual in this type of organization is too busy applying his creative energies to a job or his studies to watch a clock. He becomes totally involved in the tasks at hand. In the process, he discovers himself.

A teacher or supervisor with this goal in mind actualizes his own creative potential, effectively uses his external resources and makes something happen within the learner.

Teleidoscopic Action: Perhaps you have seen a teleidoscope. It is somewhat like the more familiar kaleidoscope that I discussed earlier; however, the basic difference is this: the kaleidoscope makes patterns and new combinations only from what is within it, whereas the teleidoscope gets its structure from within but the raw materials for patterns and color from

the outside, from the changing environment it focuses upon. This perhaps gives an even better analogy of what I am trying to bring out. That is, there are elements within the structure of a person that are a part of his total being, his total life experience. These are played upon constantly by the external input through his senses. The person's creativity depends, then, on his ability to relate not only what he already has within him, but also that which comes from outside him. Education has the responsibility of developing this relational ability in addition to -- not instead of -- the ability to fill up the mental bucket with knowledge.

Lack of Emphasis on Imagination: Although teachers show an increasing awareness of the need and the opportunities for encouraging creative behavior, our present educational system to a large extent still overlooks the intentional enhancement of such behavior. Frank Williams (1963), summarizing a variety of investigations, stated that the studies have been consistent in their findings about the frequency of certain behaviors between teachers and pupils. Approximately one-quarter to one-half of the total classroom time was spent in telling students what to do. Another quarter was spent in providing information, much of it adminsitrative. Only five percent was devoted to reinforcement of the students' responses. (Reinforcement for creative responses was almost completely lacking.) In addition, the teachers allotted only about one-and-one-half percent of the classroom time to decision-making functions.

RESEARCH ON THE NURTURE OF CREATIVE BEHAVIOR

Harold Rugg (1963) wrote: "We have had millions of hours devoted to training in solving problems by reasoning, but almost none devoted to cultivation of the imagination." Fortunately, we are finding increasing emphasis today on development of creative behavior -- largely because of research findings in recent years. This research suggests that teachers can do two things to enhance the individual's creative potential. First of all, we can help the individual gain an understanding of past influences -- his background, experience, habits, etc. -- on his present behavior. We are thus helping him to perceive himself as a creative being and to get rid of internal blocks to creative functioning. This perception is analogous to removing a governor from an automobile; the horsepower remains the same but performance increases. Perhaps it accomplishes for the "mentally well" what the psychiatrist attempts for the "mentally ill" in bringing the individual closer to functioning at full potential.

Environmental Freeways: Secondly, we can provide present environmental conditions (in the classroom, on the job, etc.) that encourage creative functioning. We are then removing external blocks to creative behavior, just as we might remove road-blocks from the path of an automobile. A driver on a freeway can use more of his car's potential than he can on a narrow, obstructed road; the individual can use more of his potential when he is in a creative climate. Note, however, that the internal governor must be removed before the environmental freeway can effect a change in behavior. It is well to add that the individual must learn to be his own governor. He must learn to adjust

to a twisty, bumpy, obstructed road when it is necessary to do so. Cultural conditioning internalizes this governor, but culture has not done a satisfactory job in teaching a person how to use it with appropriate flexibility.

Deliberate Educational Programs: Research evaluating specific educational programs designed to release internal blocks (as a means of shaping optimum creative behavior) is increasing rapidly. Although the distinction between internal and external blocks may be somewhat artificial, it appears to be a useful way of categorizing these many related studies. Our recent bibliographic search has uncovered over forty studies evaluating programs for teaching students to improve their sensitivity, fluency, flexibility, originality, elaboration and related abilities. These investigations range from the retarded level to the gifted level, and from the first grade through college and adult education. Studies of adults have involved subjects from such diverse groups as military officers, teachers and industrial personnel.

Consistent Findings: Approximately ninety percent of the total number indicate that subjects' creative-productivity levels were significantly increased by deliberate educational programs. A number of informal and unpublished studies include similar findings, so the bulk of the research is quite consistent and impressive on this question.

Subject-Matter Gains: In several investigations the creative-development training was incorporated in a subject-matter course or studied with respect to gains in normal academic areas. No losses were reported in any subject-achievement levels, and one study indicated gains in subject-matter for experimental students over control students, as well as gains in creative productivity (Sommers, 1961). An investigation by Veatch (1953) showed gains in reading when creative activities were part of the training, and in another case (Torrance, 1962) training in creative thinking transferred to creative writing.

Personality Changes: Several investigators attempted to study changes in personality as a result of experimental courses. Changes in the direction of the creative personality are evident in all but one of ten different studies, but they do not appear to be as impressive as changes in ability factors. Only a relatively few researchers have scientifically studied personality aspects, and there appears to be less consistency in their results than in findings on abilities.

Thinking Abilities: Francis Cartier once declared that there is no such thing as creative thinking -- that there is only thinking; but thinking occurs so seldom, he argued, that when it does we call it creative. A number of the studies in the literature focus on the development of these general thinking abilities, which are required by our definition of creative behavior as involving quality as well as novelty of thought. Of ten studies evaluating this type of educational program seven demonstrated significant gains in general thinking ability, critical thinking, problem-solving, IQ scores, etc., while three were somewhat ambiguous.

Effects Persist: In investigations as the State University at Buffalo, we seem to find a trend to stronger effects with greater exposure; one study measured persistence. Increased productivity, as compared with that of control students without training, was measured in subjects who had taken a creativity course from eight months to four years earlier. In a study evaluating training in the arts, Miles (1963) found persistence in a change of aesthetic attitude five months after training.

Conclusions: Insofar as existing tests adequately measure creativity, the evidence indicates that creative productivity can be increased. A few studies further demonstrate transfer effects that extend beyond the existing tests. However, the validity of training creative behavior will be more firmly established when additional evaluative studies are designed to measure gains against ultimate criteria such as job performance. One study (Simberg and Shannon, 1959) has already shown significantly greater gains in quantity and quality of suggestions by trained groups, as measured by dollar awards, when compared with an untrained control group in the same suggestion program.

Need for Additional Studies: Further research seems to be most needed in determining transfer effects, in longitudinal studies to confirm persistence effects, and in determining personality effects. The need also appears great for designing and carrying out a full-scale evaluative experiment that would utilize and integrate all the known approaches to the development of creative-intelligent behavior. Guilford's Structure-of-the-Intellect-Model might provide the theoretical framework for such an experiment.

Tested Programs: It appears that some people have experiences that develop their facility in intellectual processes associated with creativity and intelligence. Research seems to demonstrate that we can design educational programs for many of these experiences, rather than merely waiting and hoping for them to happen. Actual incremental programs, experimentally tested, are already available at the first grade (Anderson, 1965), sixth grade (Olton, 1966), and twelfth grade or adult levels (Parnes, 1966).

Coordinated Program Needed: The need now is to develop educational programs for all mental abilities instead of the relatively few that have recently been experimentally tested. These materials could then be developed into a coordinated training program in creative-intelligent behavior from the kindergarten through graduate school.

RESEARCH ON ENVIRONMENTAL CONDITIONS AFFECTING CREATIVITY

Reinforcement Increases Creative Behavior: There is usually a large gap between an individual's creative potential and his creative productivity. The deliberate educational programs I just mentioned can help close the gap, Such a climate encourages individuals to actualize their creative potential. Making people anxious or fearful of their ideas, or restricting their ideas, will usually lead to less creative behavior.

The Same Name for Different Things?: It is very difficult to determine the meaning of research terminology like "permissive" and "directive" teaching, or "low-controlling" and "high-controlling" teachers. Some studies may evaluate the same variables, but major differences certainly exist in the types of teaching or supervisory procedures called by various names, or even by the same name, by different investigators. If we can generalize, however, to the notion of "open" and "closed" teachers or supervisors -- idea-seeking persons and those who categorically give all the ideas and information -- then the studies do appear to offer convincing evidence that the former type of teacher or supervisor (or the environment he creates) is significantly more conducive to growth in student creative behavior. In a few studies cited, the results of evaluative research are unimpressive or equivocal, so that some investigators are reluctant to generalize (Wodtke and Wallen, 1965). The trend of these studies, however, does seem to favor the open type of teacher or supervisor.

Deferred Judgment: Many studies have evaluated the efficacy of the specific principle of deferred judgment as a means of releasing creativity. This principle calls for deliberate deferment of judgment during idea-finding in order to prevent premature judgment from hampering imagination. Judgment is applied only after a wide variety of alternatives are listed. This principle may be used by a single person thinking independently or by a group. When used by a group, it is popularly called brainstorming.

Arnold's Thesis: Some time ago John Arnold wrote a short piece explaining how deferred judgment might be used by an individual, a group, or an organization. Arnold's broad conception of deferred judgment suggests that research on environmental variables might be studied with this focus, and the literature seems to support his thesis. Arnold's idea seems implicit, although not always explicit, in many of the studies regarding general environmental factors affecting creative behavior. Deferred judgment (postponed, not eliminated) is a broadly applicable set which tends to provide the kind of climate that is facilitating to creative behavior. Furthermore, according to a study by Johnson and Zerbolio (1964), practice in production of ideas improved judgmental ability, while practice in judgment did not imporve either idea-production or judgment.

The Recent Wallach-Kogan Study: The study by Wallach and Kogan (1965) indicates that highly intelligent but rather non-creative subjects have a disinclination, rather than an inability, to use their imaginations. The subjects were reluctant or fearful of being original, rather than unable to be original. This finding is substantiated by a study of creativity and hypnosis (Bowers, 1965), which investigated the hypothesis that many people have a potential for higher creative performance which is blocked from expression by defensiveness. The hypothesis was confirmed. Such research supports the notion that individuals have ideas but are reluctant to express them or even to consider them unless we provide an environment that gives them a mental set different from their habitual set. We must provide either explicitly or implicitly a psychologically secure and free environment.

Extended Effort: Related closely to the deferment-of-judgment principle is a theory that extended effort in producing ideas on a creative-thinking problem tends to reward problem-solvers with a greater proportion of good ideas among the later ones on their lists. My report on studies in extended effort (Parnes, 1961) discusses this in greater detail. Two reports from the University of Michigan support the extended effort theory and its implicit deferred-judgment principle. In one of these studies, immediate solution-mindedness was hypothesized to interfere with effective problem-solving. Hence experimental subjects were given instructions designed to lessen the likelihood of immediate acceptance of an obvious solution, and therefore to increase the likelihood of consideration of numerous alternatives. Under these instructions, experimental subjects produced over three times as many solutions of superior quality (Maier and Solem, 1962). Another study showed the value of deferring and pressing for a second solution (Maier and Hoffman, 1960).

Summary: To summarize the research regarding deferred-judgment, all but two of fourteen studies at a variety of institutions have shown that more ideas and more good quality ideas are produced by subjects when using deferred judgment than when following conventional-thinking procedures. In the two exceptions, neither procedure was superior. In a fifteenth study, the results were ambiguous.

One further exception is interesting. All research I have reviewed on deferred judgment used college students or adults as subjects. Two other studies are reported at the elementary level. In both cases, no differences were found between deferred judgment and conventional thinking (Torrance, 1959: Cartledge and Krauser, 1963). As we have all observed, young children will produce original ideas whether encouraged to or not. They have not yet learned to fear their ideas as adults do.

Balanced Growth in Children and Adults: We have all observed youngsters whose originality is boundless as well as, at times, reckless and dangerous. On the other hand we all know adults whose originality has been reduced to sterility. Somewhere between these two extremes is the truly creative person. Deferred judgment frees the adult from anxieties about his ideas, and thereby results in greater release of creative potential. In the relatively uninhibited child, this release is evidently more natural. The internal governor has not been fully established. The same studies with children have shown, however, that even first graders can be taught other procedures which affect their awareness and their associative processes, and thus bring about an increased production of original ideas.

All studies to which I have referred are included in a complete summary of research re the development of creative behavior in the Journal of Creative Behavior, Vol. 1, No. 1 and 2, 1967.

FACILITATING THE CREATIVE PROCESS

Deliberate Methods: We are all familiar with the phenomenon of a "flash" solution that occurs when we are detached from conscious attention

to a problem -- that part of the creative process termed "incubation". Yet not everyone is aware that new fruitful associations can be made to occur while we are consciously attempting to work out a problem solution. In other words, deliberate methods can be used to release the latent creative power within individuals -- to put the student in better communication with himself. And practice with these methods can translate mere understanding of them into appreciation and accomplishment. These assertions are supported by the theories and research findings I have discussed.

Two General Approaches: The creative process, to reemphasize in simplest terms, might be described as the fresh, meaningful association of elements from our knowledge and experience. Hence, the fundamental purpose of a program to nurture creative behavior is to facilitate the effective use of a person's associative abilities. An individual can increase the number of his associations in two general ways: (1) feed his brain the fuel required for it to operate at full capacity and (2) remove the brakes that stop his associative mechanisms from functioning naturally.

Required Fuel: The fuel for our associative mechanisms is the sensory impressions we bring to our brain. The more data we supply the brain, the more interrelationships it can create. However, the quality of associations is dependent on both the quantity and richness of input. Therefore the development of acute awareness and sensitivity is an important aspect in the cultivation of creative talent. This includes the ability to discern relationships that are not readily obvious or apparent. It implies the development of a wide curiosity that will increase the likelihood of discovering connections between remote fields or areas of interest and activity; the more seemingly remote the relationship, the more the likelihood of originality in the idea.

Removal of Brakes: The removal of brakes relates to the variety of blocks mentioned earlier as both internal and external impediments to creative functioning. Basically the elimination of these blocks is accomplished by providing the individual with complete freedom for mental exploration. What is being done in creative problem-solving programs is placing the individual in an environmental setting which allows for complete self-acceptance. This includes not only freedom from concern for the reactions of others, but also the willingness to defer his own judgment of his ideas during the exploration process. Furthermore, to use psychologist L. L. Thurstone's terminology, we show him the value of "inhibiting his impulse" to act on his first idea.

Creative Climate: The basic framework of a creative education program provides the environmental turnpikes on which the individual can travel once he is released from the governors which have held back the flow of his raw imaginative processes. He can travel to his own "mental library" and his own "mental machine-shop".

INCUBATION

At this point it is important to consider the phenomenon of incubation in relation to conscious processes. The mental processes described above can be facilitated consciously and deliberately. As we focus upon a problem and search for ideas, we may consciously defer judgment and allow full flow

to our associative processes. Or the associations may occur in the preconscious, before awareness, as during incubation. In a sense, the deliberate, conscious efforts at making fresh associations may be considered an attempt to replicate what seems to be the unconscious or preconscious phenomenon of incubation; for incubation enables our minds to attend to items of our past experience while we focus consciously upon other items in our present awareness. Links may thus be formed which are overlooked when we search consciously for relationships. The conscious mind is limited in the number of ideas it can attend to at one time. Subconsciously, however, the mind is capable of much additional activity.

Incubation and Deliberate Processes: Since we cannot observe the unconscious, it seems very mysterious and unexplainable to us. Therefore, I have tried to explain to myself the phenomenon of incubation by relating it directly to my earlier comments as follows: An individual attempts to make as many relevant associations as possible to the problem at hand. He feeds his associative mechanisms the best fuel for optimum operation, and he defers judgment so as to "remove the brakes." In a sense, incubation is related to both of those endeavors. In order to allow for what is called incubation, the individual must get away from direct involvement in the problem for a period of time. By thus detaching himself, he has, you might say, deferred judgment or closure on the problem. As the problem "simmers" in the back of the mind -- "on his back burner" -- he attends to other things and allows his senses full play upon his total environment.

With respect to consideration of the problem, it might be reasonable to suppose that the person is in a sort of hypnotic state; that is, he has given himself the suggestion to work on the problem and has then put it out of his consciousness. All input from his environment bombards the fringes of the problem. Suddenly one element connects with an element of the problem and triggers it up into momentary awareness. Perhaps this occurs in much the same way as a very remote association is suddenly formed when one consciously attempts to produce ideas under deferred judgment. But note that the idea would not occur if the elements needed for the connection were not implanted in the mind prior to incubation. Without the requisite links in my mind, I could be bombarded with apples while under a tree yet never come up with the law of gravity.

PRACTICE ELEMENT

With respect to all that I have said, the practice element seems to be crucial to cultivating creative behavior. Understanding intellectually the principles and theories I have discussed in regard to creative behavior is a different matter from effectively internalizing them. Attending a lecture on physical education is not the same as attending a program for physical education. Likewise, studying creative behavior to understand it is quite a different matter from practicing it. Hence, almost any program designed to nurture creative behavior will of necessity provide practice in applying the principles I have

discussed. Jerome Bruner (1960) claims, "It is my hunch that it is only through the exercise of problem-solving and the effort of discovery that one learns the working heuristic of discovery..."

Experience Doubled Output: Courses will typically provide a good deal of practice in deferring judgment, in playing with ideas and forcing new relationships, in alternating between involvement with and detachment from the problem. Striking evidence of the value of such practice experience was provided by a comparison study of novices and those experienced with the use of deferred judgment at State University at Buffalo. Even though both groups were given the intellectual set to defer judgment, relate freely, strive for quantity of alternatives, etc., the experienced subjects, equivalent in all other respects to the naive group, out-produced the novices (in the same length of time) approximately two to one on both quantity and quality of ideas in solution to a problem. The results were highly significant statistically.

Knowing versus Doing: Furthermore, I feel that it may be more than a matter of the sheer practice that increases one's creative ability. I question whether a person can fully understand -- fully appreciate -- the meaning of concepts like deferred judgment until he internalizes them. As Wallace Andrews, an instructor of creative problem-solving courses, says, "You can learn all you want to about Freud, but sooner or later you have got to go out with girls." Knowing and doing are two different things.

Resist Change: Moreover, when unaccustomed to it, the person may find strange and uncomfortable the type of thinking that is required for maximizing the uncommon associations in creative thought. He may have lived too long in the cultural cocoon. Ashley Montagu once quipped that all man wants nowadays is a womb with a view.

A PROGRAM FOR NURTURING CREATIVE BEHAVIOR

One instructional program which follows the theories, research findings and underlying principles I have discussed has been developed by the Creative Education Foundation over a period of years at State University at Buffalo. After a number of years of informal experimentation and development of course materials, more formal research began in 1957. From then until 1963 the material was refined, tested and constantly revised in a wide variety of college and adult classes. It was then subjected to a three-year period of experimental programming research, which resulted in the development of better sequencing and presentation in order to allow for optimum understanding and performance by the student. Performance, of course, is a key word here, inasmuch as the course calls for repeated practice in creative functioning under an exemplary climate for this type of behavior. Growth can thus be observed and measured as the course progresses.

Approximately 700 students (adults, college undergraduates and high school seniors) were involved during the last three-year series of six major

revisions. The changes were required as a result of research into student ability to cope with the course materials during self-study. The results finally demonstrated that the revised material could be adequately understood and successfully followed by students working alone. The detailed testing called for students to write out their ideas at every place where the present course calls for classroom responses or discussion.

After the described evaluation, the material was then used as a detailed instructor's manual by instructors who taught students creative problem-solving in a normal classroom situation. That is, the instructors spoke the portions that the students had read when studying alone, and asked the students to respond aloud most of the time rather than to respond always in writing (as in the self-instructional version). Furthermore, opportunity for interaction was allowed among students and instructor in the regular classes, although the instructors, for research purposes, did not deviate in any way from the material in the manual.

The results of evaluative research showed that such an instructor-presented course was more effective than the same course taken by the student as a self-instructional program, but that both increased creative behavior significantly. Furthermore, the self-study students did not enjoy the course nearly as much as did the students of the instructor-taught program. However, even though the instructor-taught students found the course more interesting and felt they gained more from it, both groups increased their creative behavior significantly and, in their total comments, appeared to report equal application of what they had learned. Both seemed also to feel that they would apply it equally well in the future.

CONCLUSION

Automation and Education: In conclusion I would like to point out the relationship of deliberate emphases on the cultivation of creative talent to the whole question of automation and what is happening with our increasing leisure time. When I hear people bemoaning the fact that automation may swallow up jobs, I understand the short-range problem but am frustrated because of the overlooked opportunity that is provided for education to become life's primary purpose. If we could expose people from "cradle to grave" to the kind of educational process where they are accustomed to tapping their own resources, then everyone might experience the excitement of intellectual inquiry throughout life. The more we could then automate, thus freeing people to experience this, the more exciting and meaningful life could become for everyone.

Excitement of Self-Discovery: It seems that "self-discovery" can become the prime raison d'etre. If we can develop a kind of creative education which provides its own reason for being, its own self-stimulation, then the person's entire life could be built around the intense desire to learn. Just as the research scientist finds the process of discovery on the fringes of knowledge to be such a source of excitement and self-fulfillment to him,

we may be able to provide the same self-realization for everyone, at his own level, through a new kind of learning. Life would then be one continuous creative experience, a flowing and a merging of what we have with what we absorb, providing fully for what Maslow calls "self-actualization."

When someone once asked Leonardo da Vinci what his greatest accomplishment was, he replied, "Leonardo da Vinci.'

In describing the theories and principles underlying many instructional programs for developing creative productivity, Dr. Parnes used excerpts from Guide to Creative Action, copyrighted and published by Charles Scribner's Sons (New York) in 1977. Those persons interested in Dr. Parnes' successful application of his research-based theories are directed to the Guide, not only for an expansion of the ideas presented here, but for a detailed instructional program, or lesson plan, for guiding students in the practice of increasing productive creative behavior.

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TEACHING THE GIFTED AND TALENTED

Preparing Educators for the Gifted/Talented: A Challenge

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Many social critics have referred to the efforts in gifted education as typical of the pendulum swing in fleeting moments of educational innovation. Tannenbaum, a professor at Columbia, in his article entitled A Backward and Forward Glance at the Gifted, compares America's efforts in gifted education to a rocking chair--always in motion, but going nowhere. Using Tannenbaum's analogy, today's educators do appear prepared to "rock forward" for excellence, reminiscent of national efforts following the launching of Sputnik, after nearly ten years of sporadic attention to the needs of the gifted and talented children and youth.

Coupled with this new interest is a broader definition of gifted in the Office of Education in Washington, D.C., as follows:

Broad Definition of Gifted:

> Gifted and talented children are those identified by professionally qualified persons who by virtue of outstanding abilities are capable of high performance. These are children who require differentiated educational programs and services beyond those normally provided by the regular school program in order to realize their contribution to self and society.

Children capable of high performance include those with demonstrated achievement and/or potential ability in any of the following areas:

- General intellectual ability
- Specific academic aptitude
- Creative or productive thinking
- Leadership ability
- Visual and performing arts
- Psychomotor ability

The Office of Education definition is not entirely free from faults, but the definition does serve an important function in that it commits educators to a multi-dimensional concept of talent and to the development of educational programs that will stimulate a wide range of gifts instead of a strictly cognitive approach. The spirit of the federal definition is currently reflected in the fifty-five projects that are being funded by the Office of Education in fiscal year 1976.

Multiple Identification Criteria

In most cases the abstract definition has been transposed into a functional definition that includes multiple criteria. The following dimensions or procedures are being utilized:

- Parental recommendation and judgment
- Peer evaluation and nomination
- Teacher evaluation and nomination
- Evidence of achievement (standardized measures and areas valued by subculture)

. Performance outside the normal school environment
. Bilingual capability
. Evidence of creativity
    ability to improvise with commonplace materials
    ability to express feelings and emotions
    enjoyment and ability in creative movement or visual arts or music
    richness in imagery or informal language
    well-developed sense of humor
. Evidence of leadership ability

A variety of testing and interview instruments are being used as additions or replacements for standard instruments. Some of these are Taylor's Alpha Biographical Inventory, Renzulli-Hartman's Checklist, Bruch's Abbreviated Binet, Torrance's Creativity Test as well as Guilford's Structure of the Intellect. And in many cases state and local agencies, in order to include more culturally diverse students, are judging the children and youth relative to cultural or community norms, not national norms.

This upswing or surge of interest in gifted and talented education is also due in part to the creation of a federal Office of Education for Gifted and Talented in Washington, D.C., and the 1976 allocation of 2.56 million dollars in program development money.

Pioneer Efforts

These federal efforts are serving to reaccentuate pioneer efforts in gifted education, such as the much acclaimed P.S. 43 project in New York City, which was later expanded into the even more highly celebrated Higher Horizons Program.

As educators consider the neglect of talent and particularly talent in the inner city with the culturally diverse and underprivileged, the early work of Marian Goldberg and Harry Passow at Teachers College with underachieving gifted is being re-examined. Classic model programs, such as the Bronx High School of Science and Virginia Ehrlich's Creative work with the very young gifted and talented in New York City, are being scrutinized for possible direction and extrapolation by other areas. And lastly, the impact of community involvement as evidenced by Seymour Spiegel's School Within a School (SWAS), a community-run school, is being monitored, particularly the active participation that the community plays in teacher selection, curriculum development and other components of school policy.

Tap Teacher/Student Talent

This new surge of interest and activity in the area of the gifted is an opportunity to develop and locate talent not only in the gifted and talented youth but in our teachers as well. Many thousands of talented educators have left the ranks of teaching, disgruntled and disgusted with de facto segregation, low achievement in their students, and what seems to be overwhelming classroom discipline problems. One could also mention here that many of the talented students have also fled education, equally disgruntled and disgusted. The statistical data on school dropouts or "pushouts" as I prefer to call them, indicates that approximately 10 per cent of the projected 7.5 million dropouts

in this decade will have IQ scores within the top 25 per cent of the population. The largest percentage of these dropouts will be those who are culturally different. This is talent we as a nation cannot afford to lose, either in the ranks of the teachers or the students. It is just too much talent needlessly lost!

Teacher/Peer Relationships

Where do we begin as educators to capitalize on this new interest in gifted and talented? I would suggest that we begin our focus on the face-to-face teacher and pupil action in the classroom. It is extremely important that the entire school be behind the gifted program. One way to help develop this commitment is to hold intensive workshops for teachers and administrators to discuss and discover the nature and needs of gifted children and for a program. These workshops should be practical, hands on experiences utilizing, whenever possible, the expertise and excitement of teachers and administrators in the districts. Teachers should be helped to develop classroom strategies needed to teach gifted and to develop racial and cultural awareness so as to be better able to work with the culturally diverse gifted, particularly in inner cities.

The importance of the climate for achievement and self-awareness or healthy growth including both emotional and intellectual growth should also be stressed in the workshops. The introduction of a dynamic gifted program in a school system may well provide another chance for not only the able pupils who have been turned off by traditional lockstepped programs, but for the average and below average students as well.

The teacher of the gifted should be able to effect four basic interactions with students: 1) empathic understanding, 2) caring, 3) genuineness in the relationship, and 4) trust. These four traits are basically the characteristics of a facilitator as delineated by Carl Rogers in his theory of personality growth and development. In interactions in which understanding, caring, genuineness, and trust abound, both gifted students and teachers will thrive and grow.

USE OF SOI

In the gifted program, educators also need to consider that all individuals differ greatly and gifted individuals differ within themselves as a group. The theoretical contribution of J. P. Guilford in his Structure of Intellect (SOI) can be used to both conceptualize, identify and plan curriculum activities for gifted and talented. In his Structure of Intellect, Guilford identified five broad intellectual operations: cognition, memory, divergent thinking, convergent thinking and evaluation. Each of these operations may take as many as 24 different forms, depending upon the "content" of the operation (figural, symbolic, semantic, behavioral) and upon the nature of the "product" of the operations (units, classes, relations, systems, transformations, implications).

Guilford's work can provide a guide to mental attributes that can help shape a dynamic classroom for gifted students. In Guilford's scheme, two contrasting categories of mental operations take place, that of convergent thinking, one is seeking right answers under specified rules or conditions. A student may be given a theory or postulation and then asked to work out a logical implication for thought or action. While in divergent thinking, one would require students to think up their own postulations. Einstein speaks of the two thought processes as follows: "The formulation of a problem is often more essential than its solution, which may be merely a matter of mathematical or experimental

skill. To raise new questions, new possibilities, to regard old problems from a new angle, requires creative imagination and marks real advance in science."

The enthusiasm, and if you will, excitement of Einstein can be shared by gifted students who are given an opportunity to engage in both types of thinking.

Peer Interaction

In an egalitarian society such as the United States of America, it is difficult for many educators to consider grouping the gifted. The fear of superior development and performance coupled with superior attitude looms as educational intervention for gifted is discussed at most educational planned meetings. The benefits and detriments have been researched and discussed by many authors and the findings are fairly inconclusive, other than to show that gifted students do stimulate one another. The culturally diverse gifted child in particular needs to be able to work with others of his or her level in order to reap the stimulation of higher standards.

One way of grouping gifted in such a manner that it can allow for flexible interaction with all students is to include options for both horizontal and vertical ability level enrichment. This would allow for special interest or study groups of gifted to meet for a portion of the day and still remain with the majority of students the rest of the day. Another way to handle the problem would be to allow gifted students to leave the campus for part of the day and work in the community.

The importance of the gifted student working at his or her own pace with other gifted students of similar needs and characteristics cannot be overemphasized--it is crucial for the success of the gifted program! Gifted children by their very psychological nature, including characteristics of inquisitiveness, gregariousness, empathy, high energy level, high vocabulary and reasoning level, need to stretch their "mental muscles" with one another some part of the day. Just as none of us would freely hobble a race horse, we certainly should not freely hobble our gifted.

Adapting to Learning Styles

Much discussion is currently being given in educational circles to cognitive style and that usually refers to a person's mental set or his or her habitual approach to the daily world. For instance, do you tend to be fairly concrete in your thinking or abstract, analytical or intuitive? Do you tend to arrange ideas in narrow categories or broad categories? Do you view problems in a logical fashion, building on known theories, or do you strike out on your own, testing your own ideas? Are you "hand-minded" or "eye-minded?" Can you learn better by seeing, hearing, seeing and hearing, or doing? Do you like to work alone or with small groups?

All of the above questions would tend to tell us something of your learning style and yet over the years we have tended as educators to treat all

youngsters, including the gifted, as if there were only one way of learning, usually the way we were teaching. Only recently have educators taken cognizance of learning styles.

Adapting to Teaching Styles

And what you might ask of teaching styles, such as lecture, independent study, inquiry, recitation and so on. These different teaching styles can often be matched to learning styles to excite a lagging gifted youngster's desire to learn and a lagging teacher's desire to teach.

Summary

In summary, through emphasis on creating an intellectual atmosphere or climate where there is interest in ideas and emphasis on higher thought processes with high student/teacher involvement, there will be talent development in both students and teachers--a challenge worthy of the best in all of us.

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NEEDED PROGRAMS FOR THE GIFTED

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The topic of gifted education is once more moving back into educational favor and attention. The federal government has been stimulated to pass legislation for the first time, we have an explosion of parent groups interested in this topic, and states are taking action, -- stimulated by the Leadership Training Institute actions.

With the increased attention the gifted are receiving, those of us who are concerning ourselves with the gifted can no longer weep about how everybody neglects us. In one way, there is a great advantage in not having the burden of the program to carry out. There are no responsibilities to worry about, no performance criteria to live up to, and we can always be virtuous as we complain about how no one appreciates us. With the increasing support now from the federal government and from state efforts, we must think about delivering a quality product, and we must state clearly and directly what our purposes are.

A few weeks ago I had a case to discuss with a group of very stimulating young people called the Presidential Scholars. The Presidential Scholars Program is a device to recognize outstanding scholars by picking two from each state and bringing them to Washington for three days for a round of interviews and events with governmental officials. I will tell you what I told them. Namely, that in the three days that they will be visiting congressmen's offices and the White House and assorted government offices, they will be told how they are the future of the nation, how everyone is delighted with their academic performance and looking eagerly to their contributions to society, but that the real truth is that the United States has very mixed feelings about talent. In fact, America has a love-hate relationship with talent. On one hand, we do revere the achiever, and we love to say, "Where but in America can some person born in a little log cabin become president, etc., etc." At the same time, we have major concerns about egalitarianism, we worry lest someone should get any more than anyone else, that there should be no special privileges for special people, no intellectual elite. We are suspicious that some parents will use programs for the gifted to put their thumbs on the scale and get special favors for their own children.

Nowhere is the basic ambivalence more clearly seen than in our establishment of special educational provisions for the gifted. One of the standard questions that anybody in this field gets from audiences is, "Are there any special schools for gifted children?" I've come to answer that question in a different way since I have had a chance to practice my answer over a long period of time. The answer is, "Yes, there are hundreds and thousands of special schools for gifted children. We don't call them 'gifted schools'; we call them the Stanford Medical School, the Harvard Law School, the North Carolina Graduate Program in English, the University of Illinois Chemistry Program, etc. When we get to higher education, we stop fooling around, and we say excellence is needed in this society. We have, in fact, provided the broadest spectrum of higher education opportunities of any country in the world. These programs are undeniably reserved for those students who are the very best because we do accept then, at that age, the importance of nurturing talent. After all, some of us may need a good lawyer from time to time, others may need an excellent surgeon, others would like to get some good advice from a psychiatrist. But at the lower educational levels, at the elementary schools, the problems of egalitarianism manifest themselves in a great degree, and make local school administrators nervous about any visible effort to stimulate the best students. Sometimes satire is the best way to illustrate the positions we find ourselves in.

The concerns and problems of the society are often better stated by novelists than by professors. Kurt Vonnegut, Jr. has written a story that carries one of the common feelings about the gifted to a logical conclusion in a short story entitled Harrison Bergeron set in some future society.

> The year was 2081, and everybody was finally equal. They weren't only equal before God and the law, they were equal in every which way. Nobody was smarter than anybody. No one was better looking than anybody else.

The reason for this enforced equality was that people who were outstanding in various ways were given handicaps. Those that could dance had to wear sandbags on their feet, those who were strikingly good looking would have to wear a mask so as not to embarrass those who did not have those characteristics. And those with high intellectual ability?

> George, while his intelligence was way above normal, had a little mental handicap radio in his ear. He was required by law to wear it at all times. He was tuned into a government transmitter. Every twenty seconds or so, the transmitter would send out some noise to keep people like George from taking unfair advantage of their brains. (p.7)

Many other viewers of the social scene are concerned about what might happen if indeed somebody did pay special attention to the gifted in order to exploit their talents. That circumstance is presented in a novel by John Hersey called The Child Buyer. In this book Hersey describes a future world in which a huge corporation, with major government connections, is interested in buying the brightest child in town. The following describes the situation as the vice president of the corporation speaks:

> My purpose? I buy brains. When a commodity that you need falls in short supply, you have to get out and hustle. I buy brains. About eighteen months ago my company, United Lynphomilloid of America, Incorporated, was faced with an extremely difficult problem - a project of a long-range government contract, fifty years, highly specialized and top secret, and we needed some of the best minds in the country, and we looked around, and we found some minds that had certainly been excellent at one time, but they had been spoiled by education.

And so the company with its own ideas about how to produce an educated person buys bright children from their parents and takes them off to the corporation.

These two very different concerns represent major societal and value issues.

Let us take another set of recommendations as evidence of our continuing public vacillation on these issues.

1. Classes should be formed in all cities where a sufficient number of gifted children are so situated that they can with reasonable convenience be brought together. The work should be conducted according to the enrichment plan for at least an experimental period.

2. The Commissioner of Education of the United States should be requested to promote in such ways as he may find practicable, the consideration of the problem of gifted children throughout the United States.

3. Steps should be taken to acquaint every teacher, either in service or prospective, with the problem of the gifted child, with the importance of special education and with the means and method whereby she may, even in a rural school, give some help and instruction to any bright child that she may find in her group.

4. The National Education Association should be asked to stress the importance of this matter to the teachers and administrators of our schools in order that provisions may be made everywhere for helping the gifted child.

5. Much research should be undertaken to solve the many problems connected with the education of gifted children and the administration of special classes for them. The psychology of childhood, of learning, and of genius, are among the problems that should be attacked. Much money, both public and private, could be wisely turned to subsidize the trained investigator wherever he may be found. (pp. 548-549)

While these recommendations could easily be made today, they in fact come from the 1931 White House Conference on Child Health and Protection.

Since our public schools are a mirror of our society we would expect to find the same ambivalence and indecision about the gifted reproduced there, and so we do.

One of the tasks that we face is to state clearly to anyone who is interested why there needs to be special education for the gifted and what such programs should be. It would be well if we could practice a two-minute interview with the TV announcer on the 11:00 news. The basic question is, "Why should we have special programs for the gifted?" These youngsters that we call gifted have the ability to learn and to grasp ideas far in advance of their age group. The regular education program cannot be expected, unaided, to challenge these children; furthermore, gifted children come from all economic, racial, and ethnic backgrounds.

The reason why we should all be interested is that we all have a stake in their future, because the solutions to our major societal and cultural problems -- the economy, the population explosion, pollution, energy, and our own drifting sense of purpose as a nation -- will not be solved by a cavalry charge or a Congressional resolution. It will be solved only by the hard, intensive work of the brightest and most highly motivated persons in our society.

Schools can provide three major ways of changing the normal program. First, they can change the content by making math or social studies more sophisticated and more complex, and they can also introduce different content, such as an organized course on ethics and morals in modern society.

The second major way for changing the program is to emphasize skills that maximize creativity and teach specific strategies of problem solving, such as the scientific method, so that the student understands that science is not "things" but a way of thinking about the world.

Finally, we can change the learning environment to make it easier to modify content and skills. This can be done through establishing a special class for the gifted or for a given content specialty, or a resource room for removing talented children for special instruction for a portion of a day or through Saturday classes or through itinerant teachers. There are a wide variety of these procedures, all of which have a single purpose: that is, how to cluster together those youngsters with special talent to allow them to practice those talents just as we organize special programs for the athletes and musicians in the schools.

Since no one can escape a comment on acceleration for the gifted, I will make a brief comment. The total length of a professional degree program is getting to be insufferable. Often the newly minted physician or lawyer is 30 years old or older before beginning productive work.

The research evidence is clear and direct that an acceleration of one to two years somewhere in that potential 20-24 years of schooling is not harmful to the students if they are chosen with some prudence.

One indication of a special problem of the gifted child may be seen in the expressive behavior of Malcolm, age thirteen. He is a good student but worries his teachers with his expressiveness. On a sentence completion schedule some of his responses are revealing:

> Boys . . . don't look upon life as a serious matter until they become men, and I am beginning to see there is more to life than sex or money.
>
> I feel . . like stopping everything, to rearrange the situation of the world.
>
> My greatest fear . . . is that someone will be foolish enough to start a nuclear war.

I failed . . . English last year, for reasons unbeknown to me.

My father . . . believes in grades.

I . . . think these questions are blase.

My greatest worry is . . . not being able to go to college.

I am sad when . . . I feel unwanted.

My room . . . is not private. It is ransacked daily in the name of "cleaning".

What I really want out of life is . . . to be able to see things. To know what life is for, and to live it happily.

A poem that Malcolm wrote gives another indication of his concerns:

I walked out on the world this morning
Its hatred and its skies of gray.
I gave a friend my old phone number,
He might think to ring it someday.
Stopped in the park, bought a paper
The headlines were written in black.
They must have been mournin' the death of the future,
I read about it two weeks back.
Time surely flies, as
Man surely dies.
He thinks he's as smart as the grass and the trees;
He has no tomorrow, and cries on his knees.
He made up his bed
Let him lie in it.
But he'll suffer a terrible fate
He didn't protect your interests
You're right.
He did nothing but hate.

The kings and the bishops, the knights and the queens
All thrown to the fiery floor;
The pawns and their children still humble
Are shown to the sky and its golden door.

One major area of potential program change lies in the specific skills that one wishes the student to develop. In the case of the gifted, the enhancement of such special skills as the ability to problem-solve and to engage in productive thinking, to be creative, has been a recent U.S. emphasis. This is a recognition of the rapidly changing world we live in and the great need to develop students who are flexible in their thinking skills and their ability to identify problems needing solutions and ingenius in proposing possible solutions.

As Silberman (1970) has put it,

> To be practical, an education should prepare a man for a work that doesn't yet exist and whose nature cannot even be imagined. This can only be done by teaching children how to learn and by giving them the kind of intellectual discipline that will enable them to apply man's accumulated wisdom to new problems.

Much of the work in the last decade in education for the gifted has been on devices to stimulate creative thinking, to produce novel solutions, and to learn the excitement of bringing something new into existence. Much of this in turn has been stimulated by the work of J. P. Guilford (1969) whose model of the structure of intellect has been used as the basis for a large number of educational attempts to stimulate youngsters in dimensions of divergent thinking that seem related to the creative process. Divergent thinking, the ability to think of many answers and unique solutions to problems, has the virtue of opening up an intellectual area, and allowing for intellectual exploration that is not encouraged by mere factual or tightly structured problems given to the student.

For example, "What would happen if everyone in the world were born with three fingers and no thumb?" is an example of a question stimulating divergent thinking, encouraging many different answers, stimulating the child's imagination. While such exercises, if kept in isolation, are only intellectual games, divergent thinking can be used with important curricular questions.

Consider the question, "What would happen if the world's population tripled in the next quarter of a century?" This gives the student free rein to explore a wide variety of dimensions and to begin thinking about issues that need solutions. Since that particular proposition seems to be the best estimates of the United Nations regarding potential population growth in the world, it is appropriate that the best minds of the world should be spending more than a casual amount of time on it and of thinking of all possible solutions.

One of the more popular skills to be stimulated for gifted students has been related to the curriculum movement in the physical and social sciences in the 1960's (Martin and Pinck, 1966). It has been labeled the "discovery method". The virtues of the discovery method is that the students themselves are not told the larger ideas or principles to be discovered, but the materials and experiences are organized by the teacher in such a way that the students will come upon these larger ideas by themselves. This presumably duplicates, in some measure, the scientist's excitement in discovering a new concept or idea, and encourages an activist approach to learning rather than forcing the child to be a passive receptacle of information.

Therefore, the basic skills that are stimulated in the programs for the gifted involve extensive attention to the creative process, where the expectation is that something new and original will be produced, and in problem solving, in which important elements are put together to reach complex answers.

The third major program element that can be changed to meet the special needs of children is that of the learning environment itself. These changes are made to create a facilitating environment which allows for certain instructional goals to be reached that otherwise would not be accomplished. The change can range from a very minor one such as having a special teacher meet with the gifted a few hours a week, to establishing a special school for the gifted such as the famous Bronx High School of Science or the Major Work Program in Cleveland.

There is currently in American special education a philosophy of the least restrictive environment which means the child should be moved out of the regular programs only to the degree absolutely necessary and to return the child to the regular program when those special needs have been met. There is some feeling against the use of special schools or special classes for the gifted, if the same results could be obtained through a part-time special class or a class with a resource teacher added who would work with gifted children for a part of the school day as does the music teacher or athletic coach.

Leta Hollingsworth (1942) a half century ago posed a question: "How shall a democracy educate its most educable? There is no more important question in all American education." She was right and the question remains, if not untouched, at least unresolved. I would like to focus on one of the three dimensions, content, as an area most in need of further development. My thesis is that unless special content becomes an integral part of the special program the emphasis on skills and learning environment is largely wasted. Furthermore, if the content is properly organized and presented it can be done in any number of environments so that the fuss over program structure is somewhat spurious.

In the area of skills it certainly is appropriate that the gifted child be taught strategies of problem solving and creativity. However, in the end, they must be creative about something! Indeed, the study of creative adults (See Barron, 1969) shows that they are sophisticated individuals who have a true passion for a given subject which they often satisfy outside the school setting. They possess personality characteristics to persist in the face of difficulty, and the ego strength to ignore social pressures and criticism that is the essence of the creative person, not necessarily a person who possesses a bag of little cognitive tricks and games.

To spend literally months and years engineering a program of special classes for the gifted (a change in the learning environment) and then pay little attention to what content goes into those classes is analogous to the farmer spending months preparing the soil on his farm and then being indifferent to what quality seed he plants there.

In area of content, the curricula, designed for the gifted student should be different from the average student in its greater stress on advanced conceptualization and important ideas that cannot be easily grasped by students at a similar age but of average or below average ability. The rapid expansion of knowledge in all content fields in recent years has led to an avalanche of new information. Unless school curricula are carefully constructed, and unless strict self-discipline is practiced by the teachers, the student can be drowned in a pool of interesting but distracting, facts and information.

We need to be about the business of trying to synthesize the available information in various content fields into essential principles and ideas, and then designing educational experiences that will help the student grasp these ideas. The rationale for this proposition of teaching the basic ideas of the content field which formed the basis for many of the major curriculum movements in mathematics, science and social science of the 1960's has been most concisely put by Bruner (1960).

> The first is that understanding fundamentals makes a subject more comprehensible. This is true not only in physics and mathematics . . . but equally in the social studies and literature. Once one has grasped the fundamental idea that a nation must trade to live, then such a presumably special phenomenon as the Triangular Trade of the American Colonies becomes simpler to understand as something more than commerce in molasses, sugar cane, rum, and slaves.
>
> The second point relates to human memory. Perhaps the most basic thing that can be said about human memory is that unless detail is placed into a structured pattern, it is rapidly forgotten. A scientist does not try to remember the distances traversed by falling bodies in different gravitiational fields. What he carries in memory instead is a formula that permits him to regenerate the details on which the more easily remembered formula is based.
>
> Third, an understanding of fundamental principles and ideas appears to be the main road to adequate transfer of training. To understand something as a specific instance of a more general case is to have learned not only a specific thing but also a model for understanding other things like it that one may encounter. (pp. 23-25)

Examples of how such synthesis of important ideas can be done and, in fact, the viability of the approach has been illustrated by two television series produced by the BBC. The first by Kenneth Clark on Civilisation (1970) and the second by Bronowski on the Ascent of Man (1973). Each of these series tried to take central ideas and major insights and build a set of illustrative examples, conceptual linkages and consequences around them. Let me read a few brief quotes from the Bronowski series, as examples of major ideas that are well within the grasp of gifted and talented from preadolescence onward.

> War, organized war, is not a human instinct. It is a highly planned and cooperative theft. And that form of theft began ten thousand years ago when the harvesters of wheat accumulated a surplus and the nomads rose out of the desert to rob them of what they themselves could not provide.

> The architecture of things reveals the structure below the surface, a hidden grain, which, when it is laid bare, makes it possible to take natural formations apart to assemble them in new arrangements. For me this is a step in the ascent of man, in which theoretical science begins.
>
> The different cultures have used fire for the same purposes: to keep warm, to drive off predators, and clear woodland, and to make simple transformations of every day life, to cook, to dry and harden wood, to heat and split stones. But, of course, the great transformation that helped us make our civilization goes deeper: it is the use of fire to disclose a wholly new class of materials, the metals.
>
> Easter Island is over a thousand miles from the nearest inhabited island . . . . Distances like that cannot be navigated unless you have a model of the heavens and of star positions by which to find your way. People often ask about Easter Island, how did men come here? They came here by accident: that is not the question. The question is why could they not get off? And the could not get off because they did not have a sense of the movement of the stars by which to find their way.
>
> The horse and the rider have many anatomical features in common. But it is the human creature who rides the horse, and not the other way about. There is no wiring inside the brain that makes us horse riders. Riding a horse is a comparatively recent invention, less than five thousand years old. And yet it has had an immense influence, for instance, on our social structure. Plasticity of human behavior makes that possible. That is what characterizes us in our social institutions, of course, and above all, in our books, because they are the permanent products of the total interest of the human mind.

The Support System

The following represents the major elements of what the author believes any substantial program for the gifted must have in order to justify itself as a quality program.

There are six major components that comprise an effective support system. They are all familiar to educators but are rarely found integrated into an effective total program.

1. Continuous Inservice Training. It is clearly not enough to merely identify outstanding teachers in the school system and assign them to special programs for the gifted. Those teachers need to be prepared to provide specialized content knowledges and programmatic skills that will allow them to present the differentiated program that is required.

In working with gifted students, a teacher who has a little bit of knowledge can be quickly in deep trouble when these alert and ambitious students start pressing. It is important, therefore, that any such programmatic effort involve a continuous and systematic effort to upgrade the skills and knowledges of the teachers directly involved in the program. Workshops and institutes in content areas such as mathematics or social studies or in stimulating productive thinking would be examples of such training efforts.

2. Leadership Training. Along with the continuous inservice training program it is important that a program of any considerable size has responsibility for systematic program development. Leadership personnel would organize and participate in inservice training programs, coordinate content fields bringing the best of what we know in fields, such as mathematics or art from the rest of the educational staff or the community, and provide the administrative leadership for the program within the school system. It is in preparing leadersnip personnel that universities can play their most important part in the program (Gallagher 1966) because the universities should be the source of new developments in content and knowledge and of effective programming and skills that can be passed on to the leadership persons. Intensive summer workshops and training programs could be designed that would deliver those kinds of skills to people who would fill such leadership positions.

3. Research and Development. There is a natural assumption that somewhere, in some secluded laboratory or research center, important research is being done that will produce new curriculum adventures for the gifted. Unfortunately, this is not true. Money for specialized research in the education of the gifted or special curriculum development has been almost nonexistent. Recent educational priorities have gone almost exclusively to improving remedial programs for students in educational difficulties.

What is urgently needed, particularly by those resource teachers who are working with the gifted children, is the development of self-contained units that have conceptual validity and which provide that kind of specialized experience and insight to the gifted student that they would not be capable of obtaining through the regular programs. Many of these units could be developed by teams of teachers led by knowledgeable curriculum specialists. This is the kind of product that could be generated through intensive summer work if funds were available to support the establishment of four or five such curriculum teams.

4. Technical Assistance and Communication. The author in a previous article (Gallagher, 1974) discussed the importance of establishing a continuing technical assistance program that would be available for program consultation to school systems who wish specialized and individual help on their own program development. Such a unit would provide help on a variety of needs such as special curricula, the design and execution of evaluation programs, so that the local school system can assure itself that it is doing a creditable job.

Such a technical assistance system would feature a talent pool of persons in the state who could be called on when a school system needed a specialized talent not available on the technical assistance staff (i.e. someone with specialized music talent). A technical assistance program could be housed in a regional office or a university and its hallmark would be the ability to respond to individual needs of local school systems in programs for gifted.

5. State Leadership. One of the essential components of a total program is a vigorous state leadership team. A leader in the state department of education can find ways that the gifted programs can link with other programs such as the new Title IV for innovative programs in education, career education, culturally disadvantaged, etc. In other words, it provides a solid base for seeking additional resources to support programs for the gifted and talented.

As visible spokesmen, the state department personnel can bring the best of new ideas to the public and play a meaningful role in the area of communications and technical assistance. In short, they provide the hub for a total state program. When that is combined with the inservice training, leadership training, research and development, and technical assistance, then one has a total program that contains the elements necessary for developing a quality program and for insuring that that quality program will continue over time.

6. Public Policy Problems. If the preceding arguments for support services for programs for gifted make sense, then a major question remains, why are such services not implemented more often? The total cost of these support services rarely run more than 10 to 15 percent of the cost of the total service program itself, and, therefore, do not seem in and of themselves to be a major barrier.

Two major reasons come to mind for the limited application of comprehensive support services. First, no single agency has responsibility for all parts of the program. In fact, the authority is spread among a large number of agencies. The local school systems, of course, have direct responsibility for the service program and want more resource teachers for the gifted. Colleges and universities have responsibility for leadership training and would like program support in this area, while state departments of education are concerned about inservice training and technical assistance.

The research and development program could occur anywhere, but likely would be found in a large school system or university. As in most such cases, since no state agency has direct responsibility for research, very little seems to be occuring.

In addition, there has been recent interest at the national level, with the first piece of federal legislation ever identified for gifted students specifically appearing as a section in the Elementary and Secondary Education Act of 1975. This legislation was a direct outgrowth of a major review of the national status of education of the gifted by a former U.S. Commissioner of Education (Marland, 1972). Whether or not this legislation, which provides resources for leadership training, demonstrations and pilot projects, will be merely symbolic (little money appropriated for implementation) or whether it represents a first step in a more mature approach to this topic remains to be seen.

In the end, it is likely that any substantial movement forward on public school programs for the gifted depends less on the accomplishments of professional educators and more upon how the American society can resolve these conflicting feelings they have about the most talented among us. A quote by Toynbee (1968) is appropriate here:

> The creator has withheld from Man the shark's teeth, the bird's wings, the elephant's trunk, and the hound's or horse's racing feet. The creative power planted in a minority of mankind has to do duty for all the marvelous physical assets that are built into every specimen of Man's nonhuman fellow creatures. If society fails to make the most of this one human asset, or if, worse still, it perversely sets itself to stifle it, Man is throwing away his birthright of being the Lord of creation and is condemning himself to be, instead, the least effective species on the face of this planet.

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II. WORKSHOP LEADERS

A HUMANISTIC APPROACH TO THE GIFTED AND TALENTED CHILD

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Historical Background

American education has undergone many changes during the preceding years. Naturally elementary education, the foundation, has incurred change after change. For instance, in earlier times public elementary education had a strong moral tone and tended to stress (indoctrinate) the American way of life for learners. Following this period there was an emphasis on helping the immigrants to deal effectively with their new country. This emphasis led the focus toward understanding one's neighbor and society in general.

Sputnik and attending concerns pushed the country's educators into projecting the natural and social sciences. The federal government entered the educational arena by helping fund the natural sciences, mathematics and foreign languages. Concurrently, parents and community people began to chant "Johnny Can't Read", Many individuals felt that schools had neglected the basic essential skills. As an outgrowth of this period intensive curriculum work was achieved resulting in programmed and computer oriented instruction, individualized instructional concepts and various large-small group instructional formats and additional new teaching strategies.

In the early sixties the push for proper implementation of integration and the corresponding search for methods to achieve a viable education for the disadvantaged, alienated and/or underachievers created a search for educational relevance.

Presently most American educators would agree that one of the foremost objectives of teaching in the U.S. is to help create democratically functioning citizens. However, we now realize that what people have been taught and how they behave are not always congruent. For example, we have been exposed to honesty, equality and justice in our curriculum (I think). Can we say that there has been corresponding citizen behavior paralleling the exposure? I suspect we would have to conclude that there is something wrong with our exposure or something remiss with the client (Learner).

Statement of Challenge

With that historical perspective as a backdrop, I wish to state a very simple message today - Unless American education can demonstrate that it desires to really teach all peoples with equal fervor and intensity; unless American education can demonstrate the real meaning of democracy (participatory democracy); unless the institution called education can "clean up its act" and use the available and known research for humanity - America will continue to stumble, plateau and eventually decline in world significance.

Those who believe in humanistic principles of education must not be frightened nor cowarded by the majority that call for the exclusiveness of "Back-to-the-Basics".

It is obvious to everyone in this room, that the world's problems are not how much is 2+2 or the use of is not rather than ain't or some complex scientific finding--but that it is one of INTERPERSONAL RELATIONSHIPS of peoples - yet how much money do we spend for understanding each other better? However, we spend a "whole lot" of money for reading, writing and arithmetic. We now have Gifted and Talented Programs across this country. How much of it will be used for humanistic educational approaches rather than the repetitious types we normally project?

Needs of a Humanistic Educational Setting

Most schools simply don't foster participatory democracy. Schools are organized such that they don't mirror the kind of society we talk about and expouse. If schools were to project participatory democracy (with paralleling humanistic concepts) we would be able to have the type of pluralistic, humane democracy we have dreamed about for 200 years.

In order to have a model humanistic educational setting that fosters humanistic education for the Gifted and Talented, one must have a minimum of the following factors present:

1. a different type of humane educational leadership than presently exists,
2. teachers who are learner and not subject oriented,
3. educators who sincerely desire parental and community involvement,
4. educators who believe in, are committed to, and practice participatory democracy concepts and,
5. beautiful learners who are simply themselves.

As previously mentioned, the ingredients necessary for this kind of school must first address itself to the type of leadership we project in our schools. In order to have lasting change one must start at the top - and starting at the top is where our problem really exists. First, we must lose the concept of top - hierarchial type of thinking but must generate another leadership focus and style - one that denotes concepts such as togetherness, paralleling, equal, sharing, cooperativeness, shared decision making, caring and the paramount focus be always the concept of committed togetherness for the good of the learner (client). Leadership must lose its aura and halo effect that has represented a sense of "better-than-you", "know-more-than-you" - "will-lead-you" - "will-take-care-of-you", to one that says there are new and improved ways of doing things - let us explore these concepts together.

The concept of shared power is a powerful vehicle for positive change. Leaders seem not to be able to share their power because:

1. educators feel that type of leader is afraid of making decisions (actually it is more difficult to include others in the decision-making-process),
2. the leader wants to dominate and control,
3. the leader is afraid that he or she will lose control of the situation,
4. too many people involved slows down the process, and
5. it has always been done this way.

What leaders seem to fail to realize is that they are ten times as powerful when everyone is involved and working toward the same objective - quality education.

Hierarchal leadership arrangements are responsible for stifled staff creativity because there is little room for meaningful participation (it has been an established pattern so long that people actually prefer to be led by the nose).

Hierarchal leadership arrangements are counter humanistic and/or participatory democracy concept oriented and must change before significant humanistic education is a lasting reality. (This has to change in order to have a pervasive humanistically oriented system.)

Teachers must be persons who believe that all individuals can learn and must learn. They must be:

1. process oriented rather than subject oriented,
2. thinking oriented rather than memory oriented,
3. valuing oriented rather than one social set oriented,
4. challenge oriented rather than passive acceptance oriented,
5. caring, sympathetic, compassionate oriented rather than cold and calculating oriented, and
6. people oriented rather than material abundance oriented.

All educators must sincerely encourage full involvement and participation of parents and the full community in the educational process if they are to be believable. When educators are open and truly desire the input and cooperation of parents and the community the feeling of mistrust and alienation disappear into mutual trust and respect. Involvement is a psychologically sound principle that is used far too sparingly in education.

Schools should be a model of what we want our society to become. Leaders must be humanely democratic in action and style, thus setting forth a humanistic climate for the total school. Teachers must conduct their classes in a manner that models and portrays participatory democracy at its finest. Parents must be involved and become co-sponsors of humane quality education. Learners will, therefore, inevitably be humane functioning citizens.

A Case for Humanistic Education for the Gifted and Talented

Although it is important to develop humanistic education in general, it is of paramount importance that we make sure that our future leaders of tomorrow are whole individuals - individuals that possess an enormous amount of knowledge and at the same time are sensitive, caring, humanitarians that place great stress on concern for one's neighbors (all peoples).

The definitions of gifted and talented can no longer be viable and accurate if the intelligence quotient is the major deciding factor for entrance in the programs. This type of mind set and criterial reference leads into tunnel vision and narrows one's projected programming capabilities.

We are fortunate to have individuals like Harry Jarison, University of California, and Joseph Bogen, University of South California, pointing out that for years we have paid attention to left brain functions almost exclusively while not recognizing the importance of right brain functions associated with spatial, synthesizing, intuitive and holistic responding tendencies. The right side of the brain is, therefore, associated with the feeling and/or behavioral side of a man that intelligence quotients have had a tendency to negate. More educators are beginning to realize that research has proven that people don't lose jobs because of a lack of job skills but do so because of interpersonal relationship skills. Educators are also beginning to realize that you can't, from an authoritarian position, force people to change their feelings and attitudes toward people and situations but that there is hope through affective educational training strategies.

Finally, the gut question arises: How many schools have formal total school and/or Gifted and Talented humanistic programs such as:

1. Value strategy and value clarification,
2. Glasser - Schools Without Failure
3. Kohlberg rational theory of justice,
4. Taba's Social Studies Inquiry Format,
5. Power of positive thinking,
6. T. A. for staff and learner,
7. Meditation
8. Confluent education, and
9. Leadership training?

If you can answer the affirmative to the previous question you are ahead of the pack, and are to be enthusiastically congratulated.

An Ending Statement

Education in America has not been as successful as it might have been because it has functioned from the wrong philosophical base. (That is a value judgement I am prepared to defend.) Most of our teaching has been predicted on the assumption that one could teach learners in a segmented, disjointed, subject oriented manner and that somehow the learners were to gain the knowledge - pigeon-hole it properly and synthesize it into meaningful composites of viable "learnings".

We are presently castigated by many of our own colleagues, whispered about by international educators and looked upon with distain by school parental and/or community persons while we stand around in disarray not knowing what direction to chart our educational course. I suggest that we take the initiative and project a humanistic model that encourages total client participation.

REACHING THE LEARNING DISABLED GIFTED

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A youngster's or an adult's giftedness and/or talents may be buried, masked or otherwise concealed from himself, his parents, and his teachers because of overshadowing learning disabilities and resultant feelings of inadequacies. Without understanding of an individual's inner, hidden qualities, no one can ever be sure of that individual's potential. A person who pursues an undistinguished routine career for years may one day produce work of genius. A seemingly dull and withdrawn individual may - given the opportunity, emerge as a powerful commander. The history of mankind is filled with such stories: The stutterer who became Demosthenes, the orator; the peasant girl Jeanne d'Arc who led a King's armies; the monk Gregor Mendel who discovered the laws of heredity in his monastery garden.

We might conclude that persistence of the individuals made the difference between mediocracy and noteworthy accomplishments. Perhaps that's right. Stella Chess, Alexander Thomas, and Herbert Birch (1972) established a long-range behavioral study of 231 children from infancy into the teen years. This study found marked differences in such characteristics as the persistence or determination shown by newborn children. They observed great variation in the ability of different babies to continue an activity in the face of difficulties or to resume it after interruption. Some children sucked very persistently at the nipple with small holes, even if little milk was coming through. Others gave up quickly. The persistent infant kept trying to reach a toy that was out of reach. The non-persistent one tried for only a few minutes. Chess noticed that this persistence, or lack of it, set a behavior pattern that continued as the child matured.

If we make the assumption that creativity and/or the development of talent requires persistence that perhaps we can help foster the development of this trait. In Victor and Mildred Goetzel's book Cradles of Emmence (1962) in which the studies of childhoods and home environments of 400 creative men and women of this century are reported, a question is raised whether creators may be stung into creativity by a hunger for applause and love, and by a need to bury their problems in their creations. Perhaps the following are examples of individuals who were stung into creativity by their own mediocre performance (Larson, 1975):

- Madam Schumann-Heink was told by the director of the Imperial Opera in Vienna that she would never be a singer. He advised her to buy a sewing machine.
- Leo Tolstoy flunked out of college.
- Wernher Von Braun flunked ninth-grade algebra.
- Admiral Richard E. Byrd had been retired from the Navy as "unfit for service" until he flew over both poles.
- Louis Pasteur was rated as "mediocre" in chemistry when he attended the Royal College.

- Abraham Lincoln entered the Black Hawk as a captain and came out as a private.

- Louisa May Alcott was told by an editor that she could never write anything that had popular appeal.

- Beethoven's music teacher said of Beethoven, "as a composer, he is hopeless".

- F. W. Woolworth got a job in a dry goods store when he was twenty-one, but his employers would not let him wait on a customer because he "didn't have enough sense".

- Walt Disney was fired by a newspaper editor because he had "no good ideas".

- Caruso's music teacher told him, "You can't sing. You have no voice at all".

- Fred Waring was once rejected from high school chorus.

- Winston Churchill failed the sixth grade.

The Goertzels further stated that many of the children of the past who were to become eminent, like the intellectually gifted children of today, tended to possess superior ability in reasoning and in recognizing relationships. They showed intellectual curiosity, had a wide range of interests, and did effective work independently. They showed their greatest superiority in reading ability: many read at the age of four almost all were early readers of good books (Good, 1974).

But what of those who could reason and recognize relationships but who could not or did not learn to read at an early age? What of those gifted/talented/creative individuals who had a language disability? On I.Q. tests which are basically tests of language, the youngster or adult who has problems receiving, interpreting, and expressing himself through the use of language (WORDS) will be thought dull, stupid or retarded. Individual educational evaluations can uncover the basis of learning problems as well as help identify areas of giftedness and/or talents. Reflecting about careful observations of child behavior, however, can also serve as identification indicators for parents and teachers.

Since this is a conference concerned primarily with gifted/talented youngsters, I will assume that each of you has a clear understanding of what constitutes "giftedness" and what is considered a "talent". I will further assume that the term "learning disability" is a part of everyone's vocabulary but that not everyone has a clear understanding of what is or is not a "learning disability".

During this hour I will discuss with you various types of learning disabilities. We will discuss famous personalities who are or were learning disabled. Throughout, we will take a look at what teachers and parents can do to identify and encourage gifted/talented learning disabled youngsters.

First, what is a learning disability? As defined by the Federal Government, "Specific learning disability means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell or to do mathematical calculations. The term includes such conditions as perceptual handicaps, brain injury, minimal brain disfunction, dyslexia, and developmental asphasia. The term does not include children who have learning problems which are primarily the result of visual, hearing, or motor handicaps, of mental retardation, or of environmental, cultural, or economic disadvantages" (Federal Register December 30, 1976, p. 56977).

An evaluation team may determine that a child has a specific learning disability if, when provided with learning experiences appropriate for the child's age and ability levels, the child exhibits a severe discrepancy between academic achievement and intellectual ability in one or more of the following areas:

- oral expression;
- listening comprehension;
- written expression;
- basic reading skill;
- reading comprehension;
- mathematics calculation;
- mathematics reasoning; or
- spelling (Federal Register, November 19, 1976, p. 52407.)

Anna Gillingham who has long been recognized as as authority in remedial reading, said that "Acute students of biography have told us that great men often make their greatest contribution to human affairs, to art. to scholarship, along the line of some great handicap of their own early life." More than one of Gillingham's difficult readers later manifested a real flair for English expression (Gillingham, 1952, p. 1). Like the Goertzels, she suggested that these individuals were stung by their disability into accomplishment.

Virginia Woolf is an example of someone who had a handicap in early life. Virginia Woolf, the British author whose language talent made her one of the great literary figures of the 20th century, did not speak a word until she was three. In her writings she revolted against the "materialism" of the major British novelists of the early 1900's and adopted the technique of showing the inner essence of her characters by revealing their thoughts and concentrating on precise detail (Good, 1974, p. 41) one wonders if her own struggles with expressive language were behind her later accomplishments.

Another person who did not speak until age 3 years was Albert Einstein. As reported by Pattey, (1973), even throughout adulthood, Einstein found that searching for words was laborious. Until age 7 he repeated silently with his lips even commonplace sentences. Einstein was so quiet and defiant in school that his classmates and teachers suspected he might be simple-minded. School

work was difficult, especially arithmetic. Bad behavior continued until he was recognized for his scientific skills. Einstein's spelling disabilities continued throughout his adult life. He said of himself, "When I read I hear the words. Writing is difficult, and I communicate this way (speaking) very badly." "I very rarely think in words at all." Einstein's nonverbal abilities were outstanding as recognized by his uncle who challenged Einstein with geometric puzzles. Before age 10 he could build 14-story card houses, complete complex jigsaw puzzles and by age 10 he could prove the Pythagorem Theorem. He accomplished this by visually mediated thinking which involves no language. By visualizing or thinking in images he could produce at will an image, then combine it with others or otherwise manipulate it in his head. Einstein floundered in school, however, until age 15, at which time he was enrolled in a school founded and operated on Pestalalozzi's philosophy of education that visual understanding is the essential and only true means of teaching how to judge the shape of all things.

Einstein graduated from the Polytechnical Institute at Zurich but he was unable to obtain an academic job even teaching high school, so he took a position as Technical Expert, 3rd class, at the Patent Office. During his spare time he wrote the four papers that revolutionized modern physics: the special theory of relativity, the mass energy equivalence, the theory of Brownian movement, and the photon theory of light. And how about this? In the book First In Their Hearts, Thomas Fleming (1967) reported that when George Washington was 14 his brother Lawrence decided that surveying would be a natural career for George since his grammar and spelling were atrocious.

Another person who suffered from expressive language problems was an Oxford don for almost 60 years and his fame is apparently the result of his disability. This man is known for his verbal eccentricities, his propensity to slips of the tongue in which words or parts of words are transposed; spoonerisms. The man was Reverend William Archibald Spooner.

As warden of New College, Oxford, Spooner is supposed to have dismissed a student with the harsh words, "You have deliberately tasted two worms and you can leave Oxford by the town drain." During World War I he is reported to have said, "When the boys come back from France, we'll have the hags flung out." Imagine, if you will, the taunting of young Oxford collegians and the fun they must have had making up spoonerisms and attributing them to Spooner, especially after hearing him venture the opinion that "The Lord is a shoving Leopard."

Arnold Toynbee has studied the authenticity of the spoonerisms attributed to Spooner and concluded that the wittier they are the more likely they are to have been invented by "ingenious Oxford minds" whose wit was deliberate rather than accidental. Accidents like the one made by Spooner when he announced a hymn in chapel at New College certainly added grist for the Spoonerism mill: The hymn; "Kinguring Congs Their Titles Take". Finally, there is the possibility that Spooner committed spoonerisms not only by word but also by deed. In one story Spooner suggested turning on a light before escorting a guest down a dark and slippery stairway. He turned off the light and proceeded in complete darkness. On another occasion he is said to have acted out a reversal of a traditional method of spot removal: rubbing salt into a wine stain. At a dinner party Spooner had upset a salt cellar. He thereupon proceeded to pour some claret onto the spilled salt, drop by drop. (Scientic American, January 1977, p. 41).

Written expressive language was exceedingly difficult for Paul Ehrlich, the German bacteriologist, noted for his "side chain theory" and his production of "606" as a remedy for syphilis. The Goertzels reported that all his life Ehrlich profoundly pitied anyone who had to pass a written examination. His complete ineptness at composition led his teachers to excuse him from this requirement. He was passed because of his excellence in subjects other than written language. His thesis for his degree in medicine was in the handwriting of someone else. (Thompson, 1971). We are led to believe that Ehrlich's problems were with German syntax rather than the motoric execution or writing of the syntax, since nothing is said with regard to difficulties of oral expression.

Thomas Alva Edison was considered defective at birth. According to his biographer, Mr. Josephson, Edison's head was so abnormally large that the village doctor thought he might have brain fever. While Edison's teacher said that the boy's mind was "addled", his father thought the boy was "stupid". His mother assumed all responsibility for tutoring Edison, but even with this individual attention year after year from his school-teacher mother, Edison continued to have difficulties as exemplified by a letter written at age 19. Edison did not begin to learn to read until about age 12 when scarlet fever resulted in progressive deafness and listening to his mother read to him became more and more difficult. (Thompson, 1971).

Lloyd Thompson, author of the book Reading Disability: Developmental Dyslexia and of the article "Language Disabilities in Men of Eminence" stated that "many dyslexics, without expert tutelage, find ways to circumnent the handicap and become moderately good readers." Yet, the telltale evidence remains in the characteristic peculiarities of spelling during adulthood. They spell "by ear" with little visual imagery of what the word looks like, and reversals of letters or their sequence in a word crop up with great frequency. Thompson reported that Edison was particularly hard to teach. Whatever he learned, he learned in his own way. His mother inspired him, but no one ever taught him; he taught himself.

George S. Patton IV, Old Blood and Guts, by the same token could not read for himself until between the ages of 12 and 14 years and then he never learned to read well. His memory was extraordinary and he got through West Point by memorizing whole lectures and by a punctilious keeping of the rules. Thomas reported that George Patton III kept George Patton IV home on their isolated ranch and read to him. When the father went to work, the mother and an aunt took over the storybook. When he went to boarding school at age 12 he could write script, he was an authority on epics, but he could not read print. He was most unhappy and Thompson believes that those early life experiences cultured through frustration a hostility which was acted out in warfare.

Another person whom I'd like to tell you about is Jess Oppenheimer. Now we all know good ole Jess Oppenheimer who gets (or used to) sick at the stomach everytime he tried to collate papers, or read, or ride a bycycle, or catch a ball. You know Jess because he was always the last one chosen for any team game. It wasn't until Jess was in the Coast Guard that he figured out his problem, and then by accident, since ophthalmologists time and time again had

failed to find it. You can imagine what a vertical and a horizontal eye muscle imbalance would do when trying to focus on the printed page or word. Jess said that he had to go through a series of eye gymnastics since the printing doubled and seemed to move in an opposite direction to the eye shift. He finds it amazing that he ever learned to read at all. In fact, he tells students whenever he lectures at universities about television comedy writing that the necessary prerequisite for a comedy writer is a major psychological maladjustment in childhood, since comedy writers hate society and his profession gives them a safe, well-paid method of baring people's weaknesses and mistakes which Jess Oppenheimer has done beautifully as the writer of the T.V. series, I LOVE LUCY. (Oppenheimer, 1972).

Another famous personality who suffered early reading failures was Auguste Rodin - who was considered the worst pupil in school. Rodin could not understand mathematics and became a school truant. His father exclaimed, "Voila! I have an idiot for a son!" and he thrashed Auguste with a heavy belt. Evidence of genetic defect is presented by David Weiss in his book Naked Came I, which is a biographical novel based on the life of Rodin. As reported by Thompson, even Rodin's uncle gave up trying to teach him and the uncle stated that Auguste "is ineducable. The sooner you put him out to work, the better, But I doubt if he can ever make a living."

When everyone had given up on Rodin, he was free to pursue his love of art. He did learn to read and write to a certain extent, and as an adult was able to use that limited information to develop his skills further. Then his disability manifested itself in his art work as may be seen in the awkward sitting position of "The Thinker". At age 67 Rodin was overwhelmed by an honorary degree by Oxford University. He sat with Mark Twain, composer Camille Saint-Saens and General Booth of the Salvation Army and wondered what he was doing there.

Then there was Woodrow Wilson, President of Princeton University and President of the United States who did not learn his letters until age 9, or learn to read until age 11. Relatives thought Woodrow was dull and backward but his father, mother and sisters read to him by the hour. (Thompson, 1971).

More recently, in the fall of 1976, the then Vice President of the United States, Nelson Rockefeller, watched the "Puzzle Children" on T.V. and made these comments: "Based on my own experience, my message to dyslexic children is this:

- Don't accept anyone's verdict that you are lazy, stupid or retarded. You may very well be smarter than most other children your age.

- Just remember that Woodrow Wilson, Albert Einstein and Leonardo da Vinci also had tough problems with their reading.

- You can learn to cope with your problem and turn your so-called disability into a positive advantage...

.Accept the fact that you have a problem, don't just try to hide it.
.Refuse to feel sorry for yourself.
.Realize that you don't have an excuse--you have a challenge.
.Face the challenge.
.Work harder and learn mental discipline--the capacity for total concentration--
.and, never quit.

If it helps a dyslexic child to know, I went through the same thing...

.But can conduct press conferences today in three languages...
.And can read a speech on television...
.(though I may have to rehearse it six times
.(With my script in large type
.(And my sentences broken into segments like these...
.(And long words broken into syllables
.And learned to read and communicate well enough to be elected Governor of New York four times...
.And to win Congressional confirmation as Vice President of the United States (Rockefeller, 1976).

In most of the cases of language disability in eminent men, a parental figure recognized that the school was wrong in its unfavorable appraisal of the child's intelligence, and either special remedial methods of education at home were adopted or the defect in learning was circumvented by concentration of effort on the development of skills in which the child excelled. Auguste Rodin was the exception because his family gave up on him, too. All too often parents and teachers focus attention on child handicaps rather than on child strengths. In Rodin's case, his drawing ability was evidenced by age 5 but his family destroyed his efforts because art was not appropriate for their only son and namesake. When there is a strong area we all too often sigh for relief thinking, "Thank heaven that's one thing I won't have to worry about."

As parents and teachers of youngsters with learning problems, we must find those hidden strengths and focus on fostering their development. We must work on the areas of disability but not to an all-consuming extent or to an extent which jeopardizes the individual's self-worth and potential for contributions to himself, his family and/or society. Our jobs are to produce individuals who have a strong sense of worthwhileness. We can't do that by always concentrating on filling the flat tire with air when that tire still has a hole in it. Instead, we must work on patching the hole but focus our attention and give careful reflection to strengths which can result in a smooth running motor. The car can't go if the motor doesn't run. We must help learning disabled youngsters to accept responsibility for effecting their own internal change, we must expose them to thought processes of others via their best intake channel, we must provide encouragement without suffocation, we must foster a sense of competition with self, we must provide for flexibility of thought and experimentation, we must foster adventuresome, a desire to forge ahead in the face of the disability.

We can assist the L.D. gifted youngster to develop his potential strengths if we reflect carefully and treat him with respect. We must have respect for our children and confidence in their abilities. Finally, by taking a lesson from Chess's study of persistence in children, let's give children a reason to be persistent. We must have expectations for independent activity and actions. We must refrain from withholding emotional closeness or developing over dependency.

A creative profile emerged from a study of creativity by Donald Mackinnon, (Good, 1974, p. 96). It showed a person much more willing to trust his intuition than the average and ready to run risks, a person with a highly developed sense of individualism; who is self-confident and uninhibited.

Let's let our learning disabled gifted youngsters know that what they have to contribute is meaningful and worthy of stick-to-itiveness. Let's not always pull them away from their "thing" saying: "You can do that later - now let's work on your problem", because what we are saying is, "Let's pump more air in your leaky tire, your motor can run by itself". But---can it?

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THE VULNERABILITY OF THE GIFTED CHILD

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Webster's dictionary defines "vulnerable" as, "wounding, injurious, susceptible to wounds, liable to attack or injury". The denotative meaning of this word seems to bear little relationship to the gifted child, until one begins to reflect upon the emotional functioning associated with this particular category of exceptionality. That is, one can also conceptualize the gifted child as being "susceptible to 'emotional wounds'" or "liable to 'emotional' attack or injury". However, many of us tend to place the gifted child at the upper end of the exceptionality continuum. The word "exceptional", again according to Webster, means, "uncommon, rare, better than average, superior, outstanding". And, to be sure, the gifted child is just this -- i.e., on the average, in most cases! One only needs to examine the abundant research that has accumulated since Terman's (Terman, 1968) initial studies on the gifted in the early 1920s. He and his associates, plus numerous other investigators since then, have found gifted children to not only be outstanding in their intellectual capabilities, but to also excel the "average" individual in many other personal and physical characteristics. These include, for example, greater birth weight (by 3/4 of a pound), earlier age at which walking (one month less) and talking (3 1/2 months less) occur, earlier scribbling age, larger physical size, more strength, better health, less headaches, less colds, less fatigue, and even greater physical attractiveness. In addition, research has shown the gifted to be more trustworthy and honest, cheerful, popular, sensitive to others, and conscientious; to have better permanence of mood, good senses of humor and more play interests; and to be more self-reliant, independent, ambitious, self-motivated, and prone to being leaders in their peer group. How, then, with all these superior attributes, can gifted children be emotionally vulnerable? Perhaps Burt's (1975) description of Professor Norbert Wiener's (the inventor of cybernetics and eminent physicist/electronic engineer from M.I.T.) early childhood experiences best explains it.

> At the high school, which he entered at the age of ten, his fellow students, who were seven years older, already seemed to him "full grown adults", and "the seats were much too big". For some of the lessons the teacher even took him on her lap. He entered Harvard at the age of twelve, and felt still more like a shrimp out of water. "A deep strangeness fell upon me", he writes, "which has made me feel all my life a sojourner on this planet rather than a native . . . I had therefore to create for myself a fantastic personality and become an actor in real life: only then could I adapt myself to the various parts I was called on to fulfill." (p. 171)

It may be helpful to remember, then, that gifted children are children first, gifted second. They progress through the same physical and emotional developmental stages that all children go through. Gifted children, like all others, also are born with inherited differences with respect to their emotional behavior, but these innate differences are affected by learning. At each stage, nonetheless, certain expectations are present. All children will experience certain fears and anxieties at specific ages or react very strongly to unavoidable and confusing specific stress situations, such as divorce or death. Lorenz, Freud, and Maslow, for example, respectively spoke of critical periods, psychosexual stages, and heirachies of needs that all children must pass through, achieve, or satisfy in order to reach a mature level of social and emotional adjustment.

Before discussing specific characteristics and special circumstances which contribute to the emotional vulnerability of the gifted child, it is first necessary at this point to briefly discuss the concept of emotional disturbance or, as the present author prefers, "emotional maladjustment". He has developed the following definition of childhood maladjustment which, he feels, best encompasses all the necessary nuances of the term: "Maladjusted children" are those children whose social behavior and emotional responses markedly and consistently interfere with their overall intrapersonal and/or interpersonal functioning to the extent that such functioning can be considered handicapping and maladaptive (Rose, 1977). It is especially important to note here that these general patterns of behavior are observable behavioral characteristics and, that in order to be considered maladjusted, the child must exhibit them to an excessive degree -- i.e., markedly and consistently.

In light, then, of this brief introduction, it is now possible to discuss, point by point, those unique characteristics and conditions of gifted children which make them particularly vulnerable to emotional maladjustment.

1. The attitude of some who feel that, unlike other exceptional children, such as the mentally retarded, learning disabled, blind, deaf, or crippled, the gifted are well endowed in all ways and thus can take care of themselves. They are often erroneously perceived as being completely self-starting, self-motivating, and self-assured (Impellizzeri, Farrell, and Melville, 1976). Others may even go on to say that those "Gifted children who do not succeed are morally delinquent and should be punished" (Torrance, 1971, p. 557). Torrance (1971) adds the following misperception: "If a child has any spark of creativity or anything good in him. it will come out regardless of what happens to him" (p. 557).

2. Both within and out of the classroom the gifted child is faced with a world geared toward and dominated by normalcy and mediocrity. The "average" person is the key-word, and any individual who deviates from this norm finds himself[1] running into many difficult obstacles. Since the gifted child tends to be creative, to produce new, original, abstract, and divergent ideas, he therefore tends to be viewed as the abnormal, strange, or "queer" student in the classroom -- he becomes a "minority of one", according to Torrance (1971). In order to be accepted by both his peers and teacher, he suppresses his unique ideas. Yet, the need to overtly express his inner thoughts may press on him, producing inner conflict, tension, or severe anxiety. If he does choose to express them, he faces potential peer and adult rejection, loneliness, alienation.

3. The gifted child often receives conflicting, confusing, puzzling feedback from others regarding his identity, self-concept, and overt expression. For example, he produces outstanding work, yet is punished, rather than rewarded, because his best product breaks the norms and standards of the classroom and its teacher. He is taught that a "good child is a modest child" (Torrance, 1971). Conformity, therefore, again becomes the norm, the standard, the expectation, and the "gifts" that this superior youngster has to offer are subsequently lost.

4. The gifted child may experience difficulty in finding a true peer, one who has comparable ideas, interests, and abilities. As Gowan (in Schauer, 1976, p. 471) puts it, "If you're one kid in one hundred, you have to know one hundred

1. The male gender will be used throughout this paper, not in deference to the opposite sex, but rather as a means of literary convenience and expediency.

other kids to find one like yourself, and half the time she's a girl anyway, and you're sunk!" It is no wonder, then, why many gifted children resort to withdrawal or develop imaginary playmates. Certainly such forced behavior as this also contributes to the common stereotype of the gifted child being a loner or a "book-worm".

5. Thomas and Crescimbeni (1966) note that the gifted sometimes appear "too normal". That is, they fail to live up to the stereotypes and expected characteristics so abundantly portrayed in popular media or communicated through the generations by uninformed peers, siblings, and adults. Therefore, underlying and somewhat minimal emotional conflicts go unnoticed, until it is too late.

6. Relatedly, the emotional problems of the gifted are generally of the "non-irritating" type (Gallagher, in Gold, 1965). They are not overly disruptive or disturbing to parents, teachers, or peers. Again, these problems go undisclosed until they evolve into more serious personal or social difficulties. Furthermore, if the child just happens to be naturally shy and quiet, the probability of him communicating his problems to others is further lessened, while the potential for serious maladjustment is increased.

7. The fact that the gifted child is generally more verbal, perceptive, and sensitive to his own needs and motivations, as well as those of others, makes him even more aware of the existence of any personal problems within himself, and how significantly he thus deviates from his peers.

8. The gifted child may have high expectations of his abilities and, at the same time, feel others have comparable high standards for his overall performance and behavior. Therefore, in order to maintain this lofty self-image in the eyes of both himself and others, he may fail to communicate any underlying problems which actually exist. To do so would naturally risk a long fall from the idealized perch upon which he has placed himself.

9. Similarly, the gifted child's high ability levels lead to comparable high levels of aspiration. If he attempts to achieve even beyond his capabilities or level of maturity, disappointment, self-doubt, frustration, even feelings of inferiority, may arise.

10. Gifted children have a tendency to choose older playmates, obviously in an attempt to equalize their own intellectual abilities, interests, and ideas with those of their play-peers. However, the discrepancy in size and motor coordination still exists, thereby producing a significant developmental lag between these older playmates and themselves. Peer rejection, of course, may result, with consequent withdrawal or feelings of failure. This, too, helps to contribute to the stereotype of the non-athletic, awkward, lonely "genius".

11. Some gifted children do not want to stand out. They feel most comfortable and satisfied when they are given the freedom to work alone(Thomas and Crescimbeni, 1966). They require, and excel in, large blocks of uninterrupted time to read, listen, think and create. Unfortunately, though, such a need tends to further add to the general misperception about the gifted being anti- or asocial. It also compounds his weak interpersonal skills and further distanciates him from his peers. Being a "minority of one" thus leaves few models from which the gifted child can learn appropriate social behavior and acceptable means of coping.

12. If the parental relationships of the gifted child happen to be poor, he may seek out peers to satisfy those human relationship needs which go unfulfilled at home. Since people tend to search for individuals with the same interests, the gifted child may ally himself with children who possess similar rebellious, angry, and divergent behavior and ideas (Kirk, 1972). But school personnel are not able to tolerate nonconforming, angry children, so these authorities resort to strict, repressive, punitive measures, which only tend to further anger and alienate this noncomformist peer group.

13. There are some peers, parents, teachers, etc. who are well adjusted in most every way, but who just do not value success and intellectual growth. The "social motivation" (Thomas and Crescimbeni, 1966) is so strong in this case that, in order to avoid total isolation, the gifted child again must resort to intellectual suppression.

14. Some parents resent the superiority of their offspring. Whether the motivation for such hidden parental attitudes may be due to jealously, anger, ego defensiveness, or fear, the end result is the same -- the gifted child's superior abilities are ignored or punished. On the other hand, other parents may exploit their gifted child by exhibiting his superiority and publicizing his accomplishments in order to gain personal status and recognition (Telford and Saway, 1972).

15. At times undue pressure is exerted on the gifted child to succeed and be accepted by highly selective top level colleges (Gold, 1965). Such pressure may unreasonably add to the hopes and aspirations of the child, so much so that the tension to succeed may become overly great, and the potential thwarting of such goals may become highly frustrating and depressing for him.

16. Some parents (and teachers) are afraid of or do not understand their gifted offspring (or students). Their precociousness is misinterpreted as being impertinent, officious, a lack of respect, and a challenge to their authority (Telford and Saway, 1972).

17. There are potential conflicts and rivalries which may arise within families if one child is gifted and the other(s) is not.

18. Sometimes there is a large discrepancy between the teaching style of the instructor and the learning needs and preferences of the gifted child. One might say, therefore, that in this case the instructor is "teaching disabled". However, it is probably more frequent for the child to eventually be referred to the learning disabilities teacher and the school psychologist for evaluation. Because the child may now have a long-established history of underachievement, his superior abilities may have been squelched, and his psychological test results may show him to be "learning disabled" or perhaps even "emotionally disturbed". Although such misdiagnosis may be the exception, certainly the potential does exist in those situations where the teacher or school specialist is insensitive or fails to recognize the true, but hidden, capabilities of the gifted child's classroom or test performance. For example, there is a tendency for evaluators to focus on current functioning, rather than future potential.

19. Certain teachers fail to look for giftedness among the culturally disadvantaged or culturally different (Thomas and Crescimbeni, 1966). Here again the "social motivation" of the community or family may interfere with the production of superior academic and intellectual behavior. Relatedly, the mores and values of a particular segment of a community may not conform to those of the teacher, thus affecting the attitude of the teacher toward those pupils who do not dress, talk, write, or act in terms of the teacher's own standards.

20. There are some teachers who are fearful of harming or interrupting the gifted child's creativeness and superiority (Telford and Saway, 1972). They are "awe-struck" and uninformed. They fail to intervene or to provide the support and direction that all children need. The vital teacher-student relationship is, therefore, missing, so the gifted child never receives the acceptance, affection, security, motivation, guidance, and challenge that this one-to-one interaction tends to promote in all children.

21. In contrast, there are other teachers who, in their well-meaning, insensitive overzealousness, may give an excessive number of assignments to the gifted child, with the naive intention of "exercising his mind" and pushing him on to greater and greater achievements. Since the gifted child needs both to be challenged and to see real progress as a result of his efforts, he may not only view these assignments as aimless and irrelevant, but he may also grow to resent the teacher and resist her intervention. He may, instead, choose to modify the task to suit his own needs or to complete only the most satisfying portion. At the high school level, the gifted student may decide to drop the accelerated class and take an easier class in order to maintain his "A" average (Syphers, 1972). A different approach by some gifted children may be to always accept and attempt these extra assignments, but to the exclusion of all social activities. If, however, this gifted child then becomes overwhelmed and frustrated by the excessive amount, he may finally decide that there is far too much work involved to be smart and so stops producing altogether. "It is easier, safer, and more fun to be just average!"

22. A similar problem exists in the classroom with the teacher who tends to either over- or underestimate the actual worth of a given assignment. The teacher's expectations and conceptions run something like this: "Oh yes, Johnny's paper. He's gifted, so it must be a superior paper, so I'll give him an A+." Impellizzeri, Farrell, and Melville (1976) offer this example of how one gifted student described one of his teachers:

> (He's) an excellent teacher but (seems) loath to correct any errors, refusing to believe me capable of error. He told me a couple of times that I wrote as well or better than students at the college level and once was incredibly apologetic in pointing out that a story contained "a bit of a run-on sentence" which was sixty-four words long! This is all wrong. It's flattering, it's appealing, but it's all wrong.

23. If a gifted child, upon the results of intelligence testing, is accepted into the school's gifted program (resource, special classroom, acceleration, special activities, or otherwise), but another potentially gifted classmate

just misses the cut-off score for acceptance, the possibility of conflict between these two children may be quite high. Research has shown, too, that gifted children may lose social acceptance when they are removed from the classroom for special workshops (Goldworth, in Gallagher, 1964) or extra resource instruction. As well, some classmates may resent "the ease with which (the gifted can) work and solve academic problems and the approval (and special attention) they receive from teachers and other adults..." (Thomas and Crescimbeni, 1966, p. 81).

It is clear, then, that the gifted child can be emotionally vulnerable in so many ways. He is susceptible to numerous problems relating to social and emotional adjustment, which in many situations seem to be even beyond his own control. Like all children, he reacts to the environment in ways which help him to satisfy his own needs and maintain the affective equilibrium which is essential to his well-being and personal worth. Most gifted children do adapt very well. As noted previously, their adjustment processes and coping techniques have been found to actually be at least as effective, if not superior to, the so-called "average" child. Nonetheless, it is obvious that parents and educators alike can help the gifted child reduce the potential social and emotional hazards that may interfere with his total cognitive and behavioral output. Unfortunately, however, the present paper is not specifically directed toward recommendations for familial and curricular change, nor does space allow for an adequate discussion of them. Yet, it is hoped that the present paper will help to not only increase the reader's awareness of and concern for the vulnerability of gifted children, but will also stimulate him/her toward trying to effect both educational and community change in order to more appropriately meet the social and emotional needs of these exceptional individuals.

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YOUNG, BLACK AND GIFTED

THE CULTURALLY DIFFERENT CHILD

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What does culturally different mean: To be culturally different means to be behaviorally different in group identifiable ways. We know that gifted individuals can be found in minority populations and presently, for the large part those identified are not behaviorally different from the majority.

Will schools ever accomodate to meet the intellectual needs of the behaviorally different child or will they continue to reflect practices that are incompatible with the world of ethnic minorities insisting that minority children make all the accommodations.

Gallagher states the "failure" of schools to develop black potential can be partially ascribed to the culture which does not provide sufficient models or opportunity. Gallagher considers the schools part of the society and culture in which they exist.

Gallagher further determines that is is the motivational area where the key difference may be between the highest sub group, Jewish White American and the lowest sub group, Negro, Italian, Mexican and American Indian.

One would conclude that any program based upon increasing the motivational level of the young child should have a basic component of improving the child's self-concept of himself and his culture.

Mark Phillips contends that giftedness has much to do with a sense of wholeness. He further states that unless we give specific attention to developing individuals who are able to feel, to respond to others and to feel with them, who are aware and knowledgeable about their own thoughts, feelings, and actions, the many forces developing within our institutions to suppress the development of human capacities will be the prime determinants of how the gifted will develop.

The great determiner for the young black achiever lies in his self-concept. He may enter school from an emotionally, physically educationally, even morally deprived background, but I believe that the schools can by concerted effort reverse the low esteem concept which would naturally evolve from such a background and bring out the giftedness or at least raise the confidence level of such a child through a program based on raising self-concept and through a High Scope Cognitively Oriented Curriculum.

There are theories being developed relative to giftedness among minority groups and the poor. A theory based on the New York State Evaluation program contends that socio-economic level is more indicative of the level of performance than racial origin. In these studies, poor children both black and white, performed at a lower level of achievement than children in the middle class suburban areas.

Ginsberg states that items used in IQ tests require persistence and endurance rather than creative mental abilities. There is low correlation between IQ scores and creativity which leads one to believe the low IQ does not necessarily mean that the low IQ child is devoid of creativity.

Culture free tests such as the Erl Index and the Johns Hopkins Perceptual Test render a more accurate IQ measure, but are still low determinants of innate talent and inspired creativity.

As a measure of giftedness within the minority groups we might consider the criteria of the correlates of giftedness which include leadership, motor dexterity, physical condition, a sense of humor and other special talents.

If a student has one or more of these correlates there is a potential for giftedness. How the teacher views the child is a strong determinant in the child's own self interest and motivation for expanding the correlates.

Characteristics of the culturally different may be further categorized -

1) High verbal fluency and originality
2) High creative productivity in small groups
3) Adept in visual art activities
4) Highly creative in movement dance and other physical activities
5) Highly motivated by games, music and concrete objects
6) Language rich in imagery

Program adjustments needed to foster motivational drive in the culturally different:

1) Presentation of material should be concrete and a minimum amount of time devoted to teacher lecture or extended discussions, i.e., students should do experiments or go on field trips prior to discussions of general concepts. Role playing is an effective device.

2) The emphasis on inquiry training and creativity should be replaced, at least initially, by what is to be learned. The learning of a process or method of attack in problem-solving is a more abstract concept and these students often not ready to consider that.

3) Children from limited verbal environments tend not to be introverted or introspective and will not respond well to requests for self-examination of their own feelings or thoughts. Require the stimulation of concrete, external sources.

4) Should be presented with specific situations which only gradually lead to inductive thinking. The use of academic games and role playing bring forth the concrete and motoric response.

5) There is a temptation to skip steps and leap forward with gifted students. This should be resisted and a methodical orderly progression from one step to the next needed.

6) The elements of progressive education such as permissiveness, introspection, flexibility and lack of stress on discipline and authority ill-suited to this group. There is a need for firmness and structure, particularly in the beginning program stages.

The High Scope Curriculum is based upon the work and theory of Piaget. It is a highly active curriculum. The basic components are the Piaget developmental tasks of classification, seriation conservation, and position in space concepts.

The environment contains many manipulative materials, a science-math area, reading/language area. Materials vital to the program are manipulative math materials such as cuisinaire rods and the language master, materials for printing and/or typing should be a major part of the reading/language area.

This curriculum is based on operational knowledge and not verbal knowledge. It is essential that the method be consistent and structured and that the teachers' aides and parents have a high expectancy level for the progress of the population served.

The strongest objective should be to convince the child that man can improve himself through education and that one should not readily submit to fate:

The truism being--you are young, you are black, <u>but</u> you are gifted.

DO GIFTED GIRLS FEAR SUCCESS?

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Do gifted girls fear success? is the researcher's expression of the dilemma experienced by generations of girls who debate: "If I get an A on the test, will I still get a date to the dance?" No mentally healthy person wants to be unsuccessful or purposely avoids those things which bring a sense of gratification and enhanced self-concept. The problem for all girls, but particularly gifted girls, is the difference between the standards by which success is measured for males and those by which it is measured for females. Although most gifted girls do not consciously ponder this double standard, it is a strong influence on their motivation to develop the potential of their giftedness.

The problem is that the societal rewards for high achievement are just not the same for girls as for boys, a situation compounded by the fact that our culture regards the factors which measure success for males--money, power, and prestige particularly--as essential to the concept of success in general. However, the criteria against which women are judged--beauty rather than money, supportiveness rather than power, approval rather than prestige--creates a double standard which is so strong that women who do become successful by male standards find that they will likely be condemned by the shattering judgment that they have become unfeminine. While this is a problem faced by all girls to some degree, the paradox is particularly painful for gifted girls as they try to decide just how far the sex stereotyped expectations of what is acceptable for women will allow them to develop their gifts and talents.

Further discussion of this subject will be facilitated by a clarification of the differences and relationships among the terms sex discrimination, sex stereotyping, sex bias and sexism, which are frequently confused and interchanged incorrectly. In this article these terms will be used with the following contexts:

* Sex discrimination occurs when a rule, policy or law gives rights or responsibilities to the members of one sex which are not given to members of the other sex, solely on the basis of sex. The University of Virginia's refusal to admit women as undergraduates on the same basis as men prior to 1970 is an example of such sex discrimination. Fortunately, outright discrimination is increasingly illegal and should fade as an influence in the future of our gifted girls.

* Sex stereotyping, on the other hand, is a culturally determined expectation that certain behaviors are acceptable only for males and others only for females. The individual who desires to break out of the traditional pattern for his or her own sex frequently suffers social penalties ranging from teasing to ostracism. Both the boy who wants to be a nursery school teacher and the girl who wants to be a test pilot will find sex stereotyping a significant barrier to success. Girls whose demure, obedient, self-sacrificing behavior is acceptably feminine will find themselves at a disadvantage against boys whose acceptably masculine behavior is assertive, independent, and inventive.

* Sex bias describes the relative value which society has put on sex stereotyped behaviors. Generally speaking, those activities associated with males are more likely to bring the rewards by which our society indicates value--money, power, prestige--than do those traditionally associated with females. The traditional women's fields of elementary teaching, nursing, or secretarial work do not offer the same opportunities or rewards for the development and expression of giftedness as do such traditionally men's fields as academic research, surgery, or business administration. Because of the higher value put on men's work above women's work, it becomes, then, almost impossible for a gifted girl to develop her full potential without going into a man's field.

* Sexism is an expression of the traditional imbalance of power between the sexes caused by discrimination, stereotyping and bias. The elimination of sexism will not cause men to be treated as women have been treated in the past, but rather that a balance of power will evolve between the sexes in the future.

Because of the interlocking effects of sex stereotyping and sex bias, the gifted girl who sets out to develop her giftedness is marching to a very different drummer than her female friends as well as wearing heavier boots than her male companions. Programs for gifted children which do not take these factors into account unfairly tantalize girls with visions of their lives enriched by the development of their gifts and talents, without helping them cope with the psychological conundrums such a life will entail for them.

The first significant research to examine the differences between girls and boys in the concept of success and achievement was done by Matina Horner before she became president of Radcliff College. This study described what has come to be called "the Motive to Avoid Success." However, this shorthand reference obscures the explanation that the factor in question is really a "motive to avoid the negative consequences of achieving success" because "success" was outside the reward system for sex stereotyped behavior usually deemed appropriate for girls. In essence, girls with gifts and talents in appropriately feminine activities, such as writing poetry and romantic fiction, ballet dancing, or singing, would be encouraged to develop their special abilities. But for girls whose aptitudes fell within areas monopolized by men, such as science, mathematics, scholarly writing, or instrumental musicianship associated with professional bands or orchestras, the social disapproval was strong enough to provide these girls with a negative reward sufficient to discourage these natural aptitudes.

As the longitudinal Terman study of gifted children followed the original subjects into adulthood, the "successful" persons were almost exclusively male. Terman did not give any particular thought about why the study "lost" its female half. The best he could do was disclaim any way of measuring "success" of a person who was a wife and mother which was the major life occupation chosen by most of the Terman girls, excluding a few years put

in as secretaries, filing clerks or telephone operators. These women, if they had also been analyzed by the Horner study, would have likely shown a strong fear of success if that meant joining the Terman men in seeking success in the outside world. Instead they chose to avoid the conflicts and disapprobation attendant with that kind of success and allowed their giftedness to disappear into the approval of domesticity.

Because of feminist oriented scholarship in the past few years, the effects of sex sterotyping and sex bias on females in general are becoming more widely understood in education circles. While the trend to a non-sexist curriculum will benefit all children, gifted programs must give attention to the special needs of gifted girls as they struggle to develop their giftedness and an honest concept of femininity at the same time. To begin, administrators of programs for the gifted should scrutinize policies, practices, and content in the following areas: identification of the gifted, women's studies in the gifted curriculum and guidance counseling.

Identification of Gifted Children. Several of the screening instruments used for initial identification of the gifted rely on categories of observable behavior in children. Educators need to be aware that much of this behavior is culturally linked with stereotypical male behavior and for a girl to exhibit it, she is really acting out of the ordinary pattern. For example:

- Leadership and Organizational Skills. Stereotyped attitudes which assume girls should be nominated for secretary while boys are elected president cut girls off from the usual opportunities to exercise leadership. Few women are seen in national leadership or decision-making roles. Girls learn early that whom to marry is probably the only really major decision they must make in their life. Other decisions, such as, what part of the country to live in, when to move, whether or not to take a promotion are not based on their own lives but on those of their husbands; women are left with deciding what brand of soap to buy. Are girls encouraged to think of themselves as bosses or as supervisors of men or deciding how a million dollar budget for the soap advertisements will be spent?

- Spatial and abstract thinking. One of the most persistent stereotypes about females is that they think differently from men. They are supposed to be more intuitive and emotional; if a woman does exhibit logic and analytical thinking she is given the compliment that she "thinks like a man." Not many parents teach their daughters poker or chess; not many buy their girls microscopes or race car sets. Studies have demonstrated that many girls lack ability to think in three dimensions because few of the toys usually given to girls encourage such thought processes. Girls' paper dolls and boys' erector sets encourage very different mental development.

- Psychomotor Abilities. Until recently there was very little opportunity or encouragement for girls to develop athletic prowess. Fortunately that situation is beginning to change but still most girls' sports feel the pressures of sex stereotyping. National acclaim is accorded athletes in such feminine sports as gymnastics, figure skating, or diving, but women in the "sweaty sports" such as track and field or sports car racing receive little encouragement and sometimes even outright harassment. While learning team work has always been an important part of a young boy's education, team sports, with the possible exception of basketball, is frequently absent from a young girl's experience. A girl who is talented in athletics is thinking of her body in a way quite different from girls who accept the more traditional view that women should compete only in beauty pageants and not on the playing field.

Ironically, an area of human behavior in which stereotyped attitudes would give girls an edge over boys, i.e. sensitivity in human relations, is not commonly listed as a category in which educators are instructed to look for evidence of giftedness. Yet, those who work closely with gifted children would attest to a high incidence of maturity and understanding of human behavior among such children of both sexes.

The fact that girls in general conform better to the school environment (with its need for neatness and good behavior) plus the fact that there is little statistical difference between boys' and girls' scores on the aptitude and IQ tests in the early grades have worked to balance out the disadvantaging effects of sex stereotyping on the selection of girls in some gifted programs. However, administrators need to be alert to major imbalances of male-female enrollments in a gifted program which could signal that the screening and testing instruments need to be reviewed so as to correct for the effects of sex stereotyping on either boys or girls.

Women's Studies in the Curriculum. Once gifted children have been identified, the curriculum of the gifted program must be scrutinized to ensure that it does not perpetuate sex stereotyping. A strong infusion of women's history is particularly necessary so that girls can come to see themselves, not as some kind of modern freak, but rather as part of a noble sisterhood of gifted women whose earlier members fought against great odds to exercise their particular talents. Not only does this give girls role models to follow, but it is also a more accurate picture of human accomplishment and shows boys that their gender has no monopoly on genius.

In addition to just an expanded list of "famous women" the curriculum must include a thorough treatment of the social and political forces with which the "first women who . . ." had to cope. Such a background is essential to counteract two impressions which children frequently get from the usual inadequate coverage of women in American history.

If a history course mentions only five women, children assume that these were the only ones who did anything of significance, or else they infer that if these five were good enough to get into the history books that all the others were too untalented or unremarkable to be worth mentioning. Only with a thorough exposure to the cultural and legal restrictions placed on women throughout history can children of both sexes develop an appreciation for the parallel significance of the strength of spirit required of Elizabeth Blackwell in her quest for admission to a medical school with Abraham Lincoln's fabled burning desire for an education despite his limited opportunities on the frontier.

Although scrutiny of all textbooks for sex and race bias is becoming more common, administrators of gifted programs should be particularly concerned that their students are not using badly stereotyped materials. Stories in which girls are described as bad luck and women shown only at home wearing aprons or with shopping as their one business outside the home have no place among the instructional materials of a gifted program. Parents, teachers, and administrators need to review the texts and supplementary materials such as films used in the gifted program so that the worst can be discarded and appropriate teaching strategies can be devised to counteract sex stereotypes in those that remain. If girls are to profit equally with boys from gifted programs, it only makes sense that no part of the curriculum can benefit the education of one sex at the expense of the other.

Guidance and Counseling. Guidance counseling is another area in which sex stereotyping and the "motive to avoid success" must be taken into account when dealing with gifted girls. It is puzzling and frustrating to teachers and counselors to see a very bright girl purposely lower her achievement standards, avoid a rigorously academic college, or announce that her future plans are to be a first grade teacher until she gets married after which she won't have to work any more. The problem is that, without any help in understanding the "motive to avoid success" produced by the social pressure of sex stereotyping, many gifted girls do not seriously see geological science, corporate law, or muckraking journalism as real choices in their future.

Guidance counseling connected with gifted programs must include at least two essential components: providing a large number of women in non-traditional fields as role models for the girls and extensive exercises in values clarification and decision-making. Both will help young women understand how the motive to avoid success in careers which offer status, creativity, responsibility or money may be cutting them off from what will really bring them satisfaction with their lives.

To complicate further the guidance needed by gifted girls is the tendency of many of them who have made a commitment to pursue a challenging field to declare that they plan to have no children because "you can't be a good mother and an architect at the same time." Boys rarely see children and a career as an either/or choice; unfortunately, this is not an uncommon perspective of girls who have become highly motivated to succeed in a nontraditional field. Ashly Montague, in his book The Natural Superiority of Women, speaks to the potential genetic loss to the human race if gifted girls are not given help in understanding how success and motherhood need not be mutually exclusive.

Girls, also, need to know the facts of life about the life patterns of women in the latter part of this century. Chances are 9-10 that all women will work outside the home; already close to 50% of American women are currently in the labor force; and 20% of all households are now headed by women. These facts of life also include the statistics which show that despite recent reforms in laws concerning equal pay, social security and credit, sex discrimination and sex stereotyping still keep women's salaries about 60% of men's salaries and that elderly women are a large percentage of those Americans who live below the poverty line.

Women who are gifted and talented have the best chances to plan their lives in such a way as to avoid the worst economic disadvantages of sex discrimination and stereotyping. Guidance and counseling services set up to serve the gifted cannot escape the responsibility to give gifted girls the special understanding and help they need for their very special problems.

Education of gifted girls is not adequately served by "treating the girls just like the boys". While fairness in such things as classroom discipline and admission requirements can be achieved by sex-blind policies, a certain amount of affirmative action in the areas discussed above is necessary to ensure that the effects of sex stereotyping and bias which have hindered the development of female genius in the past are minimized in the future. A major goal for all gifted education must be to keep female students from being "lost" as the Terman girls were. A successful gifted program should produce a similar number of men and women whose special needs were so well met that the presence of both sexes is equally predictable when the Who's Who of the future is compiled.

SCIENCE APPROACHES FOR THE GIFTED MIDDLE SCHOOLER

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As in all science instruction, the teacher is the key to successful work with the gifted. Such a teacher may or may not be an "expert" in the area of science, but he must be an expert teacher. This teacher knows that the history of science is taught -- science is done.

Those of us who are involved with science instruction know, in few other areas of teaching is planning as essential as in science. Science teaching requires equipment and supplies. In addition, if a laboratory experience is to be planned, materials must be collected and prepared. I firmly believe the greatest impediment to an effective science program, especially at the elementary level, is the lack of appropriate equipment and, more importantly, the lack of adequate time for the teacher to prepare and plan.

Students come in to your class from other classes and have those classes in mind. Or the brief period before the final bell sounds is spent talking with friends about similar interests and activities. The farthest thing from their minds is the lesson at hand.

We have learned from methods courses that a learning situation occurs if we focus the student's attention upon a problem which they identify or challenge a concept they adhere to. It is essential that teachers of the gifted (or all students for that matter) take advantage of this fact. The beginning of any class or lesson sets the tone for that class or lesson. The approaches that follow aim to focus the student's attention on the lesson at hand and allow for meaningful participation.

1. The "Gimmick" Discussion Approach.

No matter what phrase you want to use, the teacher should, as much as possible, begin the lesson with an approach which is interesting, attention getting, simple, direct and on the student's level. Once again, if possible, it should relate to the student's past experience.

Instead of beginning a lesson on "Magnetism" by writing a statement on the blackboard, show the class two identical bars of metal, one magnetic, the other not magnetized. Ask the students if they can determine which of the two identical bars is the magnet without using any other piece of apparatus. The bars may not be broken in any way. Similarily, we can begin lessons in almost any unit of science we teach. In my experience, an opening demonstration or problem designed to stimulate questions and discussion is a most effective technique for dealing with the gifted and all science students.

2. Questioning Techniques.

Do not assume that demonstrations must be used to open every class. Frequently, analysis can begin only with questions. For example:

What effect will genetic research in humans have on our lives?

The most effective questions are those related to the students lives which require them to recall and apply previous experience. These questions begin with "How", "What", "Where", and "Why" and rarely with the phrase "Who will tell us?" The proper answer to the question , "Who will state Boyle's Law?" is "I will."

"Who will state Boyle's Law?" is a poorer question than "What is the mathematical statement of Boyle's Law?" Questions aimed at the gifted science student should call for reflective or critical thinking. These questions go beyond the simple recall and comprehension levels. They are designed to elicit the higher levels of thinking (analysis, application, synthesis and evaluation).

3. Laboratory Experiences.

If we aim to develop the talents of the gifted student, we need to free them from binding laboratory experiences. The laboratory experience as it has developed handcuffs the gifted student. The student is usually directed as to what to do. Many educators refer to this approach as the "cookbook" approach. These "cookbook" experiences have their place and may be appropriate for the less gifted student.

An examination of a variety of science laboratory manuals or workbooks reveal the following kinds of laboratory approaches.

A. No discretion (the directed "cookbook" approach)
B. Some discretion (after initial directed lab activity, students are encouraged to experiment further)
C. Considerable discretion (experiment suggestion from the teacher)
D. Joint Efforts (the teacher and students plan together to solve a problem that occurred in class)
E. Student initiated (the student plans the laboratory experiment independently)

Approach A would be used rarely with gifted students.

Each and every teacher must answer this question for himself: "What is my part in the stimulation of students with high ability in science?" One thing is clear. In your classroom every year are certain students who may become competent scientists. Whether they will or not depends in part on all of us.

READING MOTIVATORS FOR THE HIGH POTENTIAL LEARNER

GRADES K-8

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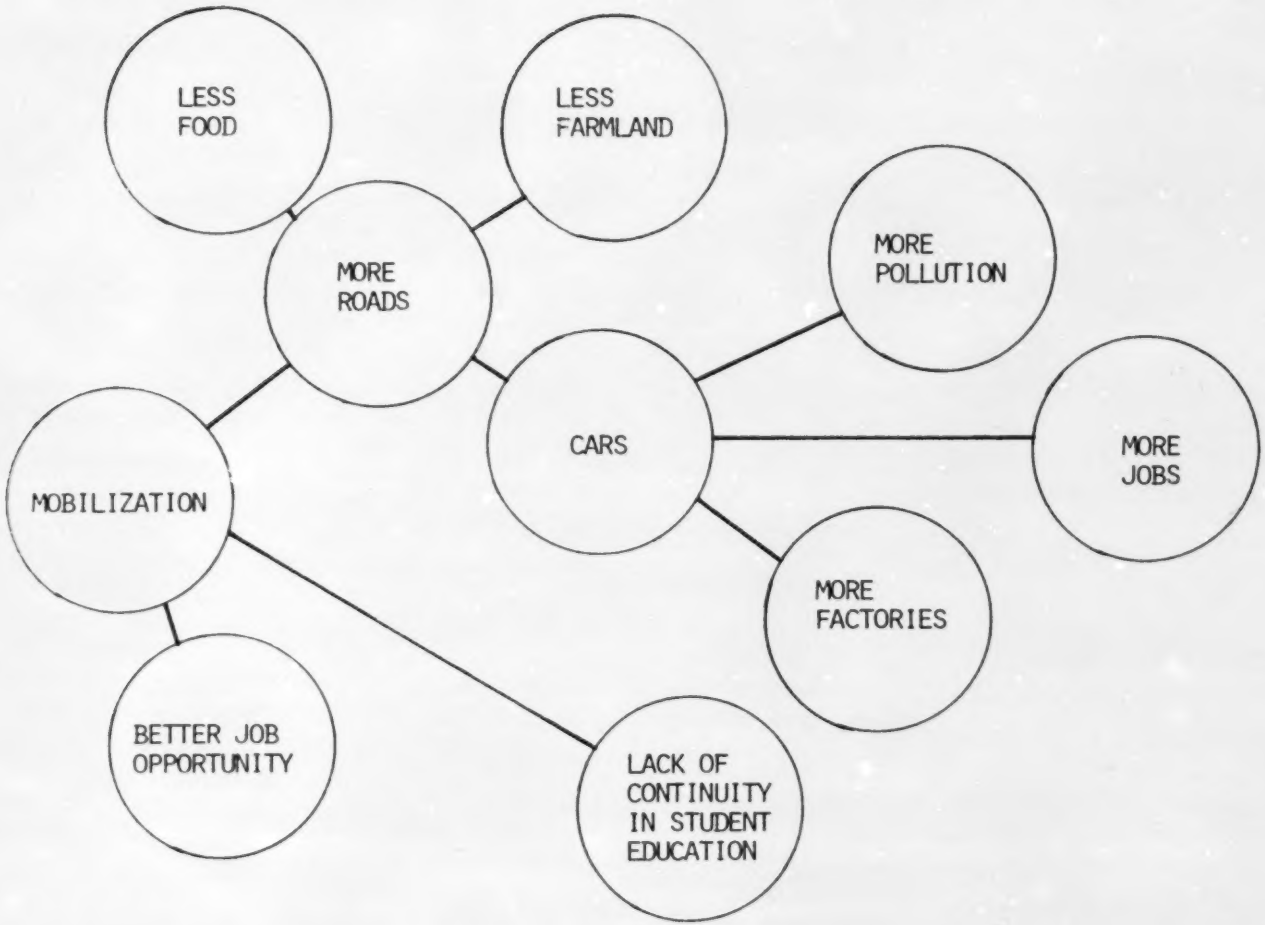
High potential learning students (gifted students) must be challenged both at school and at home. Many gifted students have become unaccustomed to being challenged and have learned to beat the system by "doing just enough to get by" -- especially at school. Dr. Dorothy Sisk, a leader in the area of education for the gifted, aptly states that students who are gifted do not automatically take care of themselves. Much guidance is needed to steer these students into worthwhile avenues.

It is important that students develop a positive self-concept--to feel good about oneself. Being challenged to the extent of one's abilities and interests and being successful goes a long way to enhance one's self concept. Sometimes gifted students may appear over-confident. Being challenged at the proper level, a level which is not "too easy", may bring the student to the realization that he or she has much to learn.

Too much television has been cited as a deterrent to the development of creative talents. As reported in Newsweek (February 21, 1977, p. 65), a University of Southern California research team exposed two hundred fifty gifted elementary students to three weeks of extensive television viewing. A marked drop was found in all forms of creative abilities as revealed by test scores collected before and after the extended period of viewing. Television and other activities have become focal points of student lives in some cases. Reading and writing creatively do not have the intrinsic importance they once might have commanded. In many cases, gifted students' abilities are being stagnated by the lack of constant exercise and vitalization. It is imperative that daily children write creatively or in some way keep their minds actively challenged by organizing ideas and knowledge in meaningful ways. Various ideas which may motivate high potential learning students to search for additional information through reading will be given in the following paragraphs.

Having gifted students think about the future is so very important Our world needs to be made safe, adequately nourished and free from disease. An exercise which can be thought-provoking and interesting to students is to choose a topic such as energy, trees, hope, reading, or travel for example. Draw a trend wheel and branch out as to the effects of a given topic. See example below and on next page. Various additional exercises can spring from this. For example, think of what the world will be like in 2,000 A.D., what inventions will be made in the next ten years, or what inventions that we now have could we easily do without.

Set aside a particular time for reading. This can be done on a school-wide or room basis. Several schools have instituted this successfully with all staff members and students (custodians, kitchen staff, secretaries and principals) participating. This type of emphasis on reading demonstrates its importance. To encourage critical reading, have students read several books about a famous individual, for example. Have students detect author bias, unique style, etc., in the various books. Similar stories in popular news magazines can be compared for author bias, among other things.


LESS FOOD
LESS FARMLAND
MORE ROADS
MORE POLLUTION
CARS
MORE JOBS
MOBILIZATION
MORE FACTORIES
BETTER JOB OPPORTUNITY
LACK OF CONTINUITY IN STUDENT EDUCATION

Parents can help their children to become interested in reading by talking with them. A book's vocabulary may have more meaning to a student if he or she has been exposed to many different words. Read to children--show them that as a parent you like to read. Listen to your children. The more children talk the more they are likely to read. Have reading material available. Buy books as gifts. Children learn to read by reading. The more practice children have, the better readers they become.

It is important to ask students questions beyond the literal comprehension level which includes the questioning of details such as who, when, where, how many, etc. Interpretive comprehension is valuable in that it challenges the students to make inferences, predict outcomes, determine cause and effect relationships, draw conclusions and make generalizations.

The newspaper can be used to create interesting reading activities. Students can re-write nursery rhymes or Mother Goose stories as present day news articles. They should include who was involved, what happened, when, why, and where did it happen and how was it caused. Have students answer a help wanted ad in the form of a letter to an employer stating their own qualities pertinent to the job they are seeking.

Have students list as many things that they can read other than books. For example, scoreboards, engravings, gum wrappers and cereal boxes, coupons, and an electric bill are some of the items which display the written word. Unique ways to report on books would be to write a new ending for a story, describe what the reader has learned from a book, describe the most important part of the book or have a debate centering on various topics or characters in the book. Some ways to apply reading in the content areas are described below.

1. Students can determine how much faster modern planes are than early ones. (Math)
2. Find statistics to defend or deny that air travel is safe. (Math)
3. Draw plans for a living room or garage. (Math)
4. Collect toys which demonstrate scientific principles and label them. (Science)
5. Read to find out which birds are the greatest travelers. (Science)
6. Find out which trees have the greatest number of enemies. (Science)
7. Compare present day facts with myths and legends. (Science)
8. Study the history of books and libraries through the ages. (Language Arts)
9. Make a study of the speeches and written work of a particular public figure; determine his motives and clues, if any, which may indicate the author's true beliefs. (Language Arts)

10. Do reference reading on American flags. Discover their origins, purposes, designs, colors and meanings. (Social Studies)
11. Hold "man on the street" interviews with a "common man" during one of the critical periods in history such as the Civil War or stock market crash of 1929. (Social Studies)

The ideas mentioned in this article are a few of the many reading motivators available for high potential learners. If interested, approximately one thousand reading motivators and reading ideas can be obtained for $ .75 (postage) by writing to Mrs. Marty Rourke, 30 Garfield Drive, Newport News, Va. 23602

A GROUP ENCOUNTER STRATEGY THROUGH CREATIVE WRITING

OR

"HOW TO UNSTUFF 'WILD' DUCKS"

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I. Objectives and Skill Development:

1. The Cognitive: -choosing from alternatives.
   -thinking divergently.
2. The Affective: -acknowledging feelings as a data source.
   -focusing on what one prizes.
3. The Active: -encouraging goal setting.
   -achieving motivation and purpose.
   -mastering a task.
4. The Interpersonal: -affirming one's choices publicly.
   -listening empathically.
   -resolving conflict situations.
   -asking clarifying questions.
   -building on commonalities/sharing.

II. Instructions for the Teacher:

1. You will need the following materials to execute this values clarification strategy:
   -pencils & notebook paper for all members of your group.
   -four pictorial stimuli.
2. Request a <u>one-word-title</u> for each of the four pictures shown from all members of your group
3. Divide the group into sub-groups of threes or fours; members of each sub-group introduce each other on a first name basis.
4. Give each sub-group five minutes to share their titles; ask them why they chose a certain title. This is a boundary breaking prelude!
5. Ask each sub-group to come up with a <u>poem</u>. Use all <u>non-identical</u> one-word-titles from <u>all</u> the members of your sub-group.
6. There are no format or style requirements.
7. Give 25 minutes to complete this task.

III. Instructions for the Students:

1. Use all non-identical one-word-titles of all members in your sub-group.
2. You may add other words to your poem.
3. Don't worry about format or style.
4. Choose a title for your poem.
5. Finish this task in 25 minutes.
6. After the completion of your task appoint someone in your sub-group to recite the poem for all of us.
7. <u>Listen</u> carefully to <u>all</u> poems of <u>all</u> sub-groups.

IV. Questioning each Sub-group:

1. Who decided on format and style in your sub-group?
2. Who was the "leader" in your sub-group?
   Def. for "leader": the most aggressive and domineering person.

3. Who was the "poet" in your sub-group?
   Def. for "poet": the most sensitive and creative person.
4. Which person did you personally appreciate the most in your sub-group? Tell us why.
5. Who had identical one-word-titles for the four pictures shown?

V. Synthesizing - Sharing with all Sub-groups:

1. Which poem was the most philosophical/sincere? Tell us why.
2. Which poem was the funniest? Tell us why.
3. Which of the poems read didn't you understand? Give an explanation.
4. Which poem did not make any sense to you ... was sort of absurd? Give us an explanation.
5. Which one-word-title did your sub-group have difficulties with? Which one "Didn't fit at all" .. which one "Threw you off"?

VI. Harmonizing Through Art:

1. Ask for a voluntary artist (sculptor) from each sub-group.
2. Tell the artists to take their poems as blue-prints in order to create a human sculpture with his/her sub-group.
3. Give all sub-groups some interaction/practice time.
4. Ask each sculptor to explain his/her human sculpture to the other sub-groups.
5. For more dramatic effects turn-off the lights and have a spotlight on the human sculpture.
6. After the artist's explanation the teacher might ask some creative questions such as:
   - What is the title of your sculpture?
   - What "materials" did you use? Why?
   - How long did it take you to create this sculpture?
   - Which national/international exhibits have you attended with your work of art?
   - What is the "price tag" for this sculpture?
   - Where would you like to see it exhibited on a permanent basis? Why?

VII. Evaluation Device - Self Report:

1. Students are asked to respond independently to this encounter strategy in creative writing.
2. Each student must complete three statements:
   - "I think ....."
   - "I feel ....."
   - "I know ....."
3. The teacher will read these self reports to adjust his/her selection of appropriate strategies in teaching the gifted and talented. The information gained through this measurement of the affective domain should be used to guide instruction and to assist students with personal growth.

III. SELECTED READING LIST OF BOOKS ON CREATIVITY

SELECTED READING LIST OF BOOKS ON CREATIVITY

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